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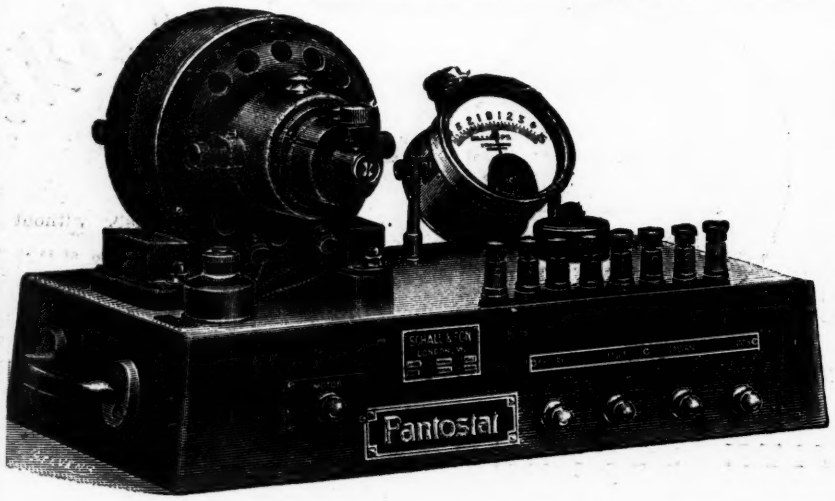

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ON

THE INFLUENCE OF THE WAR ON THE MODERN TREATMENT OF FRACTURES.*

BY

HENRY WADE, C.M.G., D.S.O., M.D., F.R.C.S.Ed.,

EDINBURGH.

THE experience which so many doctors gained when serving with the army in the field has not only modified profoundly the method of treatment of cases of fracture and other injuries, but has also changed in a marked degree our outlook on many of the general problems that confront the medical profession.

The first and most important lesson learned was that the treatment of the injured was never the concern of one single individual. It was always the joint responsibility of a team, each member of which loyally co-operated to contribute his share towards obtaining the most painless and most speedy cure of the sufferer. The responsibility for the care of the wounded man commenced on the firing step or even in the field in front of it where the soldier fell, and continued up to the time of his final cure. Let us trace his progress through the various stages of his treatment and see what lessons, useful to civil practice, we can learn thereby.

The regimental medical officer was the family doctor of his battalion. His duties, as regards the care of the wounded, commenced long before his battalion went into action or even entered the line. When on home service there was detailed to him a group of men selected usually by their company commander or squadron leader as unlikely to make efficient soldiers. These were appointed battalion stretcher-bearers and wore the S.B. brassard on their arms. At this stage in their existence they were looked on by the combatant ranks as a necessary nuisance, which unfortunately decreased further the bayonet strength of the firing line. But later the actual experience of warfare altered this opinion, and the quiet heroism they displayed, and only too often the heavy casualties they endured, made them the most respected and admired soldiers in their battalion.

The value of the instructions imparted by the regimental medical officer to his pupils was at first frequently not very apparent when it came to be tried in actual practice, but, in the later stages of the war, some of these bearers became so expert in applying dressings to recent wounds, and in treating such serious injuries as fractured femurs, that their service to the battalion was of the very greatest value. The neatness, expedition and comfort with which they carried out this treatment few medical men could equal.

When confronted with the problem of the treatment of the recently wounded, the duties of the regimental medical officer were clearly defined. They were: to cover the wound to prevent it being further contaminated, to relieve pain, to arrest haemorrhage, to provide rapid and comfortable transport, and to minimize shock.

The success which attended their efforts to minimize the shock following a serious wound was found to depend to a great extent upon the thoroughness with which pain was relieved, haemorrhage arrested, and rapid and comfortable transport provided. The history of the treatment of gunshot fractures of the femur as it evolved during the war illustrates this.

FRACTURED FEMUR: THE THOMAS SPLINT.

In the earliest stages of the war the battalion medical officer relied almost entirely on the application of a rifle splint to immobilize a fractured femur. To apply this correctly is difficult, and when applied it has many disadvantages. The patient is difficult to transport; the result is on the whole unsatisfactory. When he came under the care of the field ambulance at its advanced dressing station, or farther back, the rifle splint was removed and a Liston's long splint substituted, but little improvement was obtained, and latterly the use of this splint was generally emphatically condemned.

The mortality that attended cases of fractured femurs was at this period appallingly high. Statistics, collected over part of the army area in France in 1916 by Colonel Sir H. M. W. Gray, led him to estimate the total mortality at nearly 80 per cent., a large portion of it being at the casualty clearing station or on the way there.

The battle of Arras, which took place in April, 1917, was about to be fought, and Colonel Gray, being convinced that a great saving in life might be effected in these cases by the use of the Thomas splint as a routine method of fixation, instituted a well organized educational campaign through the medical men of the Third Army to achieve this object. With the knowledge and approval of General Allenby this was carried out. A good supply of Thomas splints was distributed to the field ambulance, and even farther forward, and orderlies were trained to put these on. The result was that cases, instead of arriving at the casualty clearing stations almost moribund from shock and exhaustion, came in well enough to stand immediate operation, and the death rate in the clearing station of one army actually fell from nearly 50 per cent. in 1916 to 15.6 per cent. in 1917.

At that period I was serving as consulting surgeon with the army in Palestine. We knew of the Thomas splint, and were advocating its more widespread employment with partial success, but soon thereafter there arrived in the East the greatest benefactor the surgery of the army there received — General Allenby took over command. At one of his earliest conferences, I am informed, when the medical organization for his forthcoming offensive was being reviewed, he said that he believed there was a splint known as the Thomas splint, which was invaluable in cases of gunshot wounds of the thigh or knee, and it was his intention and desire that there should be one such splint available for every soldier receiving a wound in this region. The driving power behind this decision was magical. The central splint factory in Alexandria, which at the time was completing an order for 2,500, received instructions to make 5,000. Every general hospital, stationary hospital, casualty clearing station, and field ambulance was encouraged to equip itself with them. The regimental medical officer carried them with his field equipment. The field ambulances had them strapped to their sand carts. Every advanced dressing station was well equipped with them, and a report was called for on any case of this nature that came back from the advanced dressing station without one having been applied.

The most valuable illustration of the benefit to the patient of the Thomas splint for the treatment and transport of the fractured femur, that I observed, was during the fighting beyond the Jordan and hills of Moab. This took place at the beginning of 1918, and consisted of raids carried far into enemy country. During the fighting at Amman roads were virtually non-existent, and it was found almost impossible to bring up the guns, and still from here men with fractured femurs were successfully transported twenty-five miles on camel-back or in limbers, and a further thirty miles in light Ford ambulances to the banks of the Jordan, where, at the corps main dressing station, they were dealt with by the advanced operating units.

The principles underlying the use of the Thomas splint are few, simple, and easily carried out, but, of course, the circumstances under which it is used were found to modify the method in which it was employed.

For us in the East a standard outfit was manufactured at the R.A.M.C. central splint factory in Alexandria. The aim underlying this outfit was to have one that was portable, and easily and rapidly applied. The rules that were laid down were that whatever method was employed, the extension must be maintained during transport. The ring of the Thomas splint must press against the ischial tuberosity and never slip over it. The lower end of the Thomas splint must be hung but not fixed to the lower stretcher bar. A suitable footpiece supports the foot.

The lesson the war taught us as regards the arrest of haemorrhage, when met with in a case of compound fracture, or occurring independent of that injury, undoubtedly was the danger attending the use of the tourniquet. To allow a patient to whose limb a tourniquet had been applied to pass out of your sight or, worse still, from

* Abstracted from a lecture delivered before the Fife Branch at Kirkcaldy on December 5th, 1920.

under your care, came to be looked on as a professional disgrace. The advice we gave to the regimental medical officer dealing with a case of severe bleeding from a recent wound, and to the field ambulance officer doing duty in a crowded regimental aid post, was, in all cases where bleeding would not cease from a natural arrest, or could not be controlled by the local pressure of a shell dressing, to grasp the bleeding points with pressure forceps and send the patient down with these haemostats attached to his wound.

A story illustrating the application of this method is of interest:

As day was dawning on the morning after the first battle of Gaza there was brought to the 44th Casualty Clearing Station, then situated north of the village of Khan-Yunis, a convoy of wounded from a field ambulance. The most serious case in it was brought direct from the sand cart into the operating tent, and there came under my care. The patient was an officer of the Royal West Kent Regiment, who had been shot in the neck, the bullet having penetrated his chest and wounded the dome of his right lung. He arrived with two artery forceps projecting from the wound above the clavicle, and his field card informed us that the internal jugular vein had been wounded and the bleeding from it arrested by the application of pressure forceps. The wound was excised, the torn vessel ligatured, and the wound in the pleura and skin closed, and later on he was sent down the line. Some months afterwards I was asked to forward particulars concerning his case, and in reply received from a senior officer of the R.A.M.C., holding a responsible administrative post at the base, a letter thanking me for the services I had been able to render to his nephew, who had been my patient and had now rejoined his regiment. I was asked to transmit to the officer of the ambulance an appreciation of the deep debt of gratitude he had earned for having saved his nephew's life. This I did, and was amused to be shown by that field ambulance medical officer a copy of the correspondence he had recently received asking him to account for the loss of two pairs of artery forceps, for the replacement of which he was held personally liable.

For the transport of cases of fracture of the femur, or injuries involving the region of the knee-joint, or in fact any case of fracture of any of the bones of the lower extremity, the Thomas splint sufficed. Up to the end of the war considerable difference of opinion existed as to the most suitable splint for fractures involving the bones of the upper extremity. From the many splints that were available and used for this purpose, I would recommend most strongly one which is easily and rapidly applied, and permits of the patient being transported in the greatest comfort—namely, the Hey Groves wire cradle arm splint. With this in your possession—and any blacksmith can make it for you in a few minutes—you require nothing more.

The transport and treatment of the case of shattered hip, pelvis, or spine is always difficult, and for such cases a Jones abduction frame is a priceless aid. It is awkward to carry, and the case for which it is suitable may be long in coming under your care, but if available when required it will be found of very great value, and contribute largely to the saving of life.

War Lessons in Civil Practice.

The application of the experience gained by the regimental medical officer and his colleague to the problems met with in civil practice merits consideration. The regimental medical officer was the keystone of the successful medical service in the field. He knew it and was proud of it. Contrary to the regulations, he proudly wore the bonnet of his battalion, or the badge of his regiment, and wherever his men went there he was to be found. Prompt attention and prompt transport were his guiding principles, and in doing these well he did the greatest of the many services the wounded man received.

The general practitioner of medicine is the regimental medical officer of the industrial army, and the solution of many of the most fascinating problems is in his care, where recent injuries have to be dealt with. For example, what arrangements exist for the supply of Thomas splints to the coal pits in our neighbourhood? Where are they to be found at the pit bottom? Who is trained in applying them? Can the arrangements for the transport of the miner with the broken back from the coal face, where he has been hurt, to the pithead be improved?

If our civil advanced dressing station be an office at the pithead, or a neighbouring miner's cottage, the question of its equipment may be put to you. Drugs and dressings we will never forget, but what is of greater value is likely to be absent. If you receive the offer of help that I did when stationed with my unit at Suvla Bay on the Gallipoli peninsula, I would advise you to reply, as I wired back, "Send sponges, rubber hot-water bottles (the army called them stomach warmers), and clean pyjamas." If you can deliver your case of fracture clean, warm, and with the fragments well splinted within four hours at corps main dressing station, you have done the best for your patient, even although the wound is uncleansed.

Most of the popular glamour of military surgery was focussed on the corps main dressing station, where the advance operating units worked, or on the casualty clearing stations in France, where these formed the forward surgical centres. The patient having arrived in a suitable state for operation, the first problem was the disinfection of his wound. The evolution this process underwent is of interest. Chemical disinfection was at first mainly relied on, and when the antiseptics in common use failed, new ones were invented. Watson Cheyne introduced an antiseptic paste with which the wound was filled, with results that proved unsatisfactory. Eusol was found of value, and the Dakin-Carrel method of treatment was employed. Of the latter it may be said, as was once remarked of socialism, it would be an ideal practice in an ideal community, but in an ideal community it would not be required. Something less exacting in its demand on the time of the staff, something less fool-proof was wanted. Then came the saline tide. The introduction of chemicals from without having failed, we turned to a method whereby, with the aid of salt solutions, we flooded the wound with antibodies from within, normal saline solution, hypertoxic saline solution, and salt packs being used. Many were cured by this method, and several had serious secondary haemorrhage in consequence of it.

Finally the old adage was remembered, that the best of all antiseptics was the healthy tissues, and the excision of wounds was practised, all the unhealthy damaged tissue being cut away and the wound closed or united later by secondary suture. The many brilliant results that followed this line of practice must not, however, upset our temperate judgement. Many wounds will be found where complete excision of the damaged tissues is an anatomical impossibility. Others will be met with already seriously infected. For these cases two remedies were found of great value, one bipp and the other flavine.

Bipp and Flavine.

The use of bipp, or bismuth iodoform paraffin paste, was condemned as harmful by a number of surgeons with wide experience in the treatment of the wounded. In many cases, however, when the grounds for their criticism were reviewed, it was found that the method that had been employed in using the remedy was not that advocated by the originator of this line of treatment, Mr. Rutherford Morison, but that, contrary to his advice, a large quantity of it had been left in the wound, subsequently giving rise to harmful consequences. Some seem to have employed it as they would Beck's paste, filling up the entire cavity with it, and even thereafter closing the wound. Naturally the tissues resented such a foreign body containing irritant chemicals and endeavoured to expel it in the abundant discharge that resulted.

In the later stages of the war bipp was used in many cases in the Egyptian Expeditionary Force, and we found it to be of great use in many of them. Owing to the nature of the military operations that were being carried out, where the wounded had nearly always to be treated many miles from rail-head, and in all cases had to be transported through most difficult country before reaching the forward casualty station, or the hospitals on the lines of communication, it was frequently the case that the patient could not be re-dressed within twenty-four hours. When Damascus was captured the wounded were then nearly 400 miles from rail-head.

Where the wound was already infected, or where complete excision of it could not be practised, and the surgeon was compelled to leave behind a certain amount of devitalized tissue, the use of bipp was found of great value. It was possible in such a case to transport the patient in comfort and in safety, leaving the wound undressed for several days. Frequently his temperature was raised above normal, his pulse quickened, and a sero-purulent discharge escaped from the wound, which was swollen and somewhat oedematous, but it was noticeable how little pain he suffered. He slept well, his appetite was good, and later the wound was found to heal rapidly. The method employed was to cleanse the wound thoroughly of all

débris and damaged tissue, completely arrest all bleeding, and then disinfect it with spirit, after which a very small quantity of bipp was rubbed carefully into every corner of the wound, any slight excess that remained being carefully wiped off so that none remained visible at the end of the application. The wound was then packed, or in certain cases closed, and a spirit dressing applied.

The most astonishing results that were obtained by the use of bipp were in cases of gunshot wounds of the knee-joint resulting in acute suppurative arthritis.

Our experience with the use of flavine was interesting. At first from a study of the literature it appeared to us that at last we had here provided for us by Carl Browning the ideal antiseptic. It was non-toxic; it was virtually non-irritant. At first it might be employed in a strength of 1 in 1,000, and for subsequent treatment in a strength of 1 in 5,000. Instead of losing its potency when diluted in the serum of the tissues this was enhanced.

Our experience with the original consignment and with what we obtained later was similar to that of other observers—that it was a remedy with peculiar limitations. We found it an excellent remedy for pickling the wound. The wound remained remarkably dry, quiet, and irresponsive. The process of suppuration and the process of repair both seemed to be in abeyance, and it was found advisable to substitute, after it had been used for a few days, another remedy such as eusol or saline solution, when the wound then actively responded and healing took place rapidly. It will be thus observed that flavine found its greatest sphere of usefulness in cases where there was much damage of tissue which had to be transported long distances.

The lessons applicable to civil practice from these experiences appear to me to be the importance of early operative treatment in the case of a recent wound, such as a compound fracture, and the value of practising primary excision in these. If the tissues are extensively damaged and this cannot be practised, or if the wound is already infected, I would advocate that it be bipped, or, if the patient is to be transported out of your personal care, that it be packed with gauze soaked in flavine solution in the strength of 1 in 1,000.

GUNSHOT FRACTURES IN BASE HOSPITALS.

There are few who will deny the contention that one of the most brilliant achievements in the history of modern surgery is the record of the treatment of gunshot fractures as carried out in the base hospitals in the later stages of the war.

Many factors detrimental to success were present. Pearson and Drummond estimated that there were 5,000 new femur cases in the British army in France alone in the last nine months of the war, and this may be estimated to form only about 5 per cent. of all the casualties that had to be dealt with. Imagine the situation! Hospitals overcrowded at a period when they were being bombed during the night—so much so that some had to be moved and all patients evacuated and transported to England. For the 5,000 cases mentioned only a limited staff was available, and finally the class of injury that had to be treated was one where almost every one differed in some detail in its nature and required careful individual attention, and at any moment it was liable to provide you with that ghastly surgical tragedy—a severe secondary haemorrhage. And still the end results were uniformly brilliant.

Some will naturally seek for an explanation of this success in some new apparatus or new form of operative treatment that was employed. They will certainly discover that the young military surgeon invented and improved many articles of great use in dealing with such cases. These appliances all had this characteristic, that they further improved and simplified the immobilization of the fractured bone and at the same time further mobilized the patient.

The Balkan frame or Balkan bed that was extensively employed by them permitted the limb to be immobilized in any attitude desired, especially with the limb abducted. It also allowed of the patient raising himself in bed and even assuming the sitting posture, and, when the knee flexion piece was attached to the Thomas splint, flexion of the knee-joint could be practised daily without interfering with the maintenance of continuous extension. To obtain this extension Pearson's callipers, which grasped but did not penetrate the condyle of the femur, were especially beneficial and permitted of direct and accurate extension being carried out in a manner simpler and safer and over a longer period than did a Steinmann's pin. At the same time I must confess that my experience in the use of Steinmann's pins for transfixing the femur appears to have been unusually fortunate, for, out of over a hundred cases in which I have seen it employed, I cannot remember one case that was followed by serious after-consequences due to its use.

In many cases Sinclair's glue proved of value, and for fractures in the region of the ankle his skate was of great assistance. The properly designed fracture bed with the biscuit and half-biscuit mattress helped most materially to increase the patient's comfort.

The possession of all these, however, was not the secret of the success obtained. This was mainly to be found in the whole-time staff of medical men, nurses, and orderlies that carried out the treatment. A continuity of policy could thus be practised, a standardization of the principles of treatment obtained, and the end-results observed by the keen and devoted team of workers who had cared for these cases. In other words, the cases were concentrated: the men anxious to treat them got them to look after. They had time to do so, and saw the final result.

The application of the knowledge to be gained from these experiences to civil practice is worthy of our careful consideration. To begin with, we start with this advantage, that most of our cases are much easier to treat, being simple fractures with unbroken skin. At a moderate cost a complete outfit can be obtained for treating a case of fractured femur. The simplest and best bed frame, in my experience, is the Morison R.I.E. bed-frame. Its invention is the outcome of the application of the wide knowledge of Sir Harold Stiles's late resident, Dr. Abbott, now of Ann Arbor in America, by Mr. Morison, engineer to the Royal Infirmary, Edinburgh.

The complete outfit should include a knee flexion piece for attachment to the Thomas splint and pressure pads for correcting local lateral displacement. A pair of Pearson's callipers and a pot of Sinclair's glue will complete our essential equipment, but a bent Thomas splint and a Sinclair's skate will be found most useful for treating fractures of the leg, whether simple or compound.

Even when all these were available, I have seen in a military hospital, and, more recently, in civil practice, a lamentable failure attend the treatment of a simple, straightforward case. Let us be frank and discuss the reason. Is it not to be found mainly in a disinclination or a lack of sufficient time to treat these cases on the part of the surgeon in attendance? Is it not true that in most hospitals the recently appointed house-surgeon, or even the surgeon in charge, estimates the luck of the waiting day, on the following morning, by the number of cases of fracture that have not been admitted? He much prefers that vacant beds should be available for the admission of cases requiring operative treatment where the problem to be dealt with is rapidly solved in the operating theatre, and little further is required but hasty observation of his patient's progress.

In so many hospitals the visiting staff have not time to devote to the proper care and treatment of fractures, and in nearly all hospitals the tenure of office of the house-surgeon is so brief that his period of service has almost expired before he really understands how to deal with such cases, and he relinquishes his appointment in favour of one who in his turn has to be trained.

I do not suggest that great skill or dexterity or prolonged study is necessary to treat cases of fracture. All that is required is a devotion to this branch of surgery by one who has the time and enthusiasm to carry out carefully daily observations on the progress of his patients and note the faults at their inception, when they are usually easily corrected. The fundamental principles underlying this practice are few, simple, and easily understood.

In military surgery, when the patient was discharged from the general hospital he was transferred to a convalescent dépôt. On the whole he had a very good time there. He had ample opportunity for rest and relaxation, and its environment was usually such as to encourage him to be out and about, and games suitable for his crippled state were usually provided. From this hospital he was transferred to the command dépôt, and on the day of his admission graded in his suitable class. If seriously crippled

he would be put in the fourth class and looked after by a medical officer. The officer in charge of the dépôt was a combatant, but no patient could be transferred from his class to a higher one without the approval of the medical staff. Ultimately, as he gradually improved, he would reach the first class, where he was capable of carrying out regular exercises, usually in the form of specially designed games, and also certain duties, such as mounting guard and light fatigues. Before he returned again to his regiment he was boarded, and the final result of his treatment was not judged by what he who originally operated on him thought, but by the cold light of the end-result obtained. The question then was, Can he wear his equipment? Can he march five miles with his pack? Can he do the full and arduous duties of a soldier of the line? And if so he was considered a Class A man.

The lessons we learn from this are of course extremely difficult to apply to civil practice in our democratic community, but I am sure that there is here a great field for improvement in our surgical work. Rigid and compulsory training or exercises are sought for by no civil surgeon that I know of, but the harmful effects of their absence are seen in almost every compensation case following injury. A very great deal, I am sure, can be obtained voluntarily, and if the facilities existed and their benefits were demonstrated in the case of a few the great majority would soon seek to participate in them.

Economic Aspect of Fractures.

The economic importance of the treatment of fractures is realized by us all. The injury is usually met with when the patient is at the height of his wage-earning capacity and has the responsibility of a household and family dependent on him.

The issue of the BRITISH MEDICAL JOURNAL of November 30th, 1912, contains the report of the British Medical Association Committee on the treatment of simple fractures:

> In Table VII, which deals with all fractures occurring in patients over 15 years of age, those treated by non-operative measures were 1,324; their average duration of incapacity was 27.6 weeks. The number of cases in which the incapacity was permanent was 121, or 9.02 per cent. There were 179 cases of fracture of the shaft of the femur, the average incapacitation being 33.6 weeks, and the number of cases in which incapacity was permanent was 21, or 11.7 per cent.; 673 were fractures of the shaft of the tibia and fibula, the average number of weeks of incapacity being 26.7; 41 of these were permanently incapacitated, that is, 8.1 per cent.

Recently I discussed with a large employer of labour the question of hospital organization and the economic importance of the treatment of fractures in the industrial world, and he was kind enough to give me access to information bearing on the financial side of this question.

> I have been provided with a consecutive series of 22 cases of workmen who in the year 1917-18 suffered fractures of the bones of their lower extremities in the course of their work. Of these, 7 were fractures of the thigh, 14 fractures of the leg, and 1 was a fracture of the thigh and leg. To these £2,932 11s. 5d. was paid in compensation, and out of the 22 fractures, 14 exceeded a period in which their recovery might be fairly anticipated. It is estimated that the extra compensation paid by the employer in consequence was £1,558. It is also estimated that the financial loss to these 14 men amounted, even after crediting them with their compensation, to £3,663, the total loss being thus £5,221, a sum which appears even more impressive when capitalized as an annual charge at 6 per cent., when it amounts to £87,000.

I do not say these figures are accurate and beyond dispute. No statistics are. The important feature of them, however, is that they are considered so by the person who has provided me with them. According to the information possessed, he and his fellow masters of a great industry believe, apart from humanitarian grounds, that there is value to be obtained by themselves, their employees, and the State from good surgery. Their deliberate conclusion is that, when calculated on the 1918 basis—which, of course, is much lower than now holds good—a sum up to £5,221 may economically be expended in one year in improving the treatment of 14 cases of fracture.

We all realize that there is very considerable scope for improvement in our treatment of fractures. Most of us will acknowledge that if we are given paper and a pencil and the pocket of the British taxpayer, that so many in the present day seem to imagine is bottomless, to finance our schemes, we could produce in half an hour an excellent plan on paper wherein there was created something similar to a field ambulance at every coal-face and a casualty clearing station at every pithead. But, fortunately, we will not be called upon to do this, and something more economical and more efficient, at least as the Briton works, will have to be produced.

The Part of the General Practitioner.

I think it is of vital importance, when any scheme of medical reform is being discussed and thought out, that the cardinal underlying fact should always be borne in mind that it must be based on the general practitioner of medicine, who has the care of the health of the industrial army. All such schemes should be so thought out that, when completed, they come to the general practitioner, not to take from him the cases he is at present treating successfully and economically, but preferably he should be approached and asked what he requires to do that work more efficiently, more rapidly, and more successfully. The care of the recent accident and the arrangement for its transport must always be his sphere of duty. The equipment necessary to carry that out can, however, be centralized for him and distributed as he advises.

The serious case of fracture will always require prolonged institutional treatment, and the question is who is best able to carry that out. In the issue of the BRITISH MEDICAL JOURNAL of November 20th, 1920, you will read a most interesting article by Sir Robert Jones on orthopaedic surgery in relation to hospital training. He advocates that all fractures, whether recent or old-standing, ununited or malunited, shall be given over to the care of a special orthopaedic surgeon, who shall have a fully equipped department to deal with them.

In certain teaching hospitals I think this is a sound proposal, for these departments would set a standard for all and provide the necessary post-graduate training school for a wide area. For the provincial smaller hospital, however, this scheme appears to me not to be possible; but I consider that it would be an experiment well worthy of being tried to hand over all cases of fractures admitted to such an institution to the care of a member of the staff especially appointed for the purpose. The ideal man for such a post would be a local general practitioner, not too busy, and with an instinctive love for hospital practice. If I had to select him I would choose one whose inclinations were not for work in the operating theatre. I would almost go the length of prohibiting him from doing general surgical operative work. He will find the care of these cases a fascinating study. They will require a daily visit and frequently a call again in the evening. To assist him he will require a whole-time nurse trained in the simple elements of massage. It is absurd and unsatisfactory to expect him to do this work gratuitously or on a charitable basis, and he, of course, would receive payment for his services. The source of this revenue I cannot do more than suggest, but it seems to me that, in the light of the figures I have already given, if the case for efficiency in the treatment of such cases is laid before the master and men concerned, they would not hesitate to meet such an expenditure. The financial saving, if nothing more, it would effect would be immense. Certainly it would well justify at least a five years' trial.

The problem of the fracture case that is discharged from hospital and continues to drag on, showing little improvement, is one of great difficulty, but a suggestion as regards its solution is contained in the BRITISH MEDICAL JOURNAL of September 18th, 1920, in an article by Dr. T. Lister Llewellyn on a physical therapeutic centre, and I am sure it should not be difficult to discover. Such a scheme is voluntary in its features and British in most of its characteristics, and consequently offers, in my opinion, the greatest prospects of success.

ON February 8th the 346th anniversity of Leyden University was celebrated by an address delivered by the rector magnificus, Professor R. van Calcar, on the development and significance of modern bacteriology.

AT a recent meeting of the Vienna Urological Society, the president, Dr. Zuckerkandl, delivered a eulogium on the late Professor Guyon of Paris, all the members standing up in token of respect.

An Address
ON
INTERNATIONAL ORGANIZATION AND PUBLIC HEALTH.*

BY

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THE invitation of your President gives me the opportunity of drawing the attention of the Society to some recent international arrangements for the promotion of public health, and in particular I have thought it would be of interest to say a few words about the International Health Organization which will shortly come into being, as a result of a series of detailed resolutions which were passed by the Assembly of the League of Nations at Geneva in December. With the project envisaged by these resolutions I have personally been somewhat closely associated, as it was my privilege to be nominated by the Ministry of Health, on the recommendation of the chief medical officer, to be the technical adviser on this subject to the British delegation, and, what in this connexion was perhaps more important, to take part in the original international discussions which were initiated by Dr. Addison more than a year ago, when it became necessary to examine the position in regard to international health matters which had been created by the treaty of Versailles. It will be remembered that by the Covenant of the League of Nations, which forms an integral part of that treaty, the members of the League undertake to take steps in matters of international concern for the prevention and control of disease. The League is also empowered to take over the direction of international bureaux established by general treaties, among which is included the existing Office International d'Hygiène Publique, which was established by the Convention of Rome, 1907.

These provisions undoubtedly form something of a landmark in public health history, by giving formal expression to the importance which health questions now assume in the practical affairs of the government of the nations of the world. They show, internationally, the effect of the same movements which in this country led to the central amalgamation of health services and the creation of a Minister of Health; which in France also have since led to the splitting off of public health administration from the other departmental matters which were overshadowing it at the Ministry of the Interior; which have resulted in the Ministries of Health which have been established in the new countries of Central Europe; and which have brought about also the remodelling and strengthening of central public health services which we are now witnessing in the United States and in our own Dominions. The Covenant wisely recognized that as nations thus increase and strengthen their internal health government, new points of contact, need for common action, and even risks of political differences must arise internationally. It was necessary that a league, designed to secure comity among nations and to prevent or resolve disputes, should bring public health questions within its range of activities.

The practical sanitarian, accustomed to look with small enthusiasm on the elaboration of schemes which appear far-reaching only on paper, and with that mistrust of long views which is so useful in the pursuit of our calling, is perhaps likely to exhibit only a mild interest in the fact that the League of Nations, whose own future in many directions is uncertain, has taken to itself a wide outlook over technical matters—economics, finance, international transit, world conditions of labour, and the like—and has added public health to them. It is for him of greater interest to take the short view, and to ask first whether, as a practical matter, international official action can contribute anything worth having at the present time to public health that cannot be obtained as easily without it, and then to inquire how, through the League of Nations or otherwise, it is proposed that this action should be taken. The manner of doing things, as he knows well, is often at least as important as the matter of them.

To answer this question, it may be useful to begin, and perhaps rather in a wholesale way, by a process of elimination. It must be remembered that the League of Nations represents associated Governments, and its activities depend, first and last, on the views and action of Governments—in other words, it is an official machinery if it is anything. For international co-operation in health questions that do not require official or Government intervention and support a League of Nations machinery would offer little advantage. Accepting this, we can at once exclude from the question before us much that can in a general sense be termed international medical work. All medical science, in a sense, is international; it is as cosmopolitan as music. In medicine, least of all, do we want to ask, when we hear news of progress, whether or not it is "official." Jenner, Pasteur, Metchnikoff, Ehrlich—it is the man's work that leaps to the mind with names such as these, not their nationality. We do not need to set up an international bureau to tell us in all the official languages of discoveries and new knowledge given us by workers all over the world. Have we not enough—even more than enough—of abstracts and summaries and translations? There are special cases, to which I will refer shortly, where we can only get the information we require for public health work through Governments, but all will agree that our own journals, not forgetting the *Medical Science Abstracts and Reviews* of the Medical Research Council, which give them freely and in one tongue, amply suffice for all ordinary needs, while we have also all our medical societies—always on the look-out for information from other countries—and our international medical and sanitary congresses, which are all the better for their voluntary character and independence.

So also with research. At the assembly at Geneva much attention was given to an attractive proposal by the Argentine delegates that the League of Nations should promote medical research on a large scale by establishing and financing a large central research institution, and should take active part in the establishment of health laboratories all over the world for the investigation and prevention of disease. The project, had it been pressed and accepted in committee, would probably have been wrecked on the financial rocks; the budget and commitments of the League and its proposed technical organizations were being closely scrutinized. But it was at least debatable whether on its merits it would have been right to press it. Someone once proposed to give a great mansion and grounds for habitation by poets, where their products could be turned out under ideal conditions of comfort and in contact with other poetic minds. The true medical research worker would probably be as horrified at the prospect as the poet. Without shutting the door to future functions of an official international health office as a clearing house for certain kinds of research work—a matter obviously to be considered—it cannot be maintained that nations wishing to progress in medical science would be doing their best by putting their men and money into any international forcing house for research. Both would be better employed at home. Moreover, the days of private support to public medicine are happily not over. The Rockefeller Foundation, with its world-wide humanitarian scope, gives us an example of a magnificent form of internationalism all the more effective by its freedom from official control.

So again with the great humanitarian institutions. The benevolent in all civilized countries combined in the interests of international public health. The various Red Cross organizations, now so much strengthened in authority and funds by the war, have united to form a common organization—the League of Red Cross Societies—which is to work for health in time of peace, with the special function of educating and helping backward or poverty-stricken countries. These Red Cross activities received special recognition in the Covenant of the League of Nations, which requires the signatory countries to encourage them. I do not propose here to formulate the lines of demarkation which should be followed between this important voluntary body and an official health organization of the League of Nations, especially as the matter has been recently and fully discussed by Sir George Newman in his first annual report to the Ministry of Health. The various conferences on the subject have always led to the same conclusion—namely, that in practice the line should be easily drawn (the more so as the League of Red Cross Societies is itself

*Read to the Society of Medical Officers of Health on February 18th, 1921.

established in Geneva); that not only should there be no reason for rivalry, but each should be strengthened by the other. It is the fact, I believe, that the League of Red Cross Societies has already found itself hampered by the absence of a health section at the League of Nations, and it is obvious that the latter, when established, will be much advantaged by what has already been accomplished and prepared by the Red Cross organization. The situation, in fact, is one which is familiar to public health officers in every administrative area where voluntary work and expenditure of voluntary funds on health matters go on side by side with official work; when ordinary tact and prudence is exercised harmony and mutual benefit is secured.

WORK FOR THE INTERNATIONAL ORGANIZATION.

If any further fears are entertained that those who have been concerned with this question have been carried away by unreasoning international idealism, or have bureaucratic designs to capture public medicine at large by some new international machinery, they will, I think, be sufficiently dispelled by a study of the objects which the proposed organization is in fact required to fulfil. These objects are stated as follows in the resolutions of the Assembly; it will be seen that their terms are carefully guarded.

OBJECTS OF THE INTERNATIONAL HEALTH ORGANIZATION.

(*a*) To advise the League of Nations in matters affecting health.

(*b*) To bring administrative health authorities in different countries into closer relationship with each other.

(*c*) To organize means of more rapid interchange of information on matters where immediate precautions against disease may be required (for example, epidemics), and to simplify methods for acting rapidly on such information where it affects more than one country.

(*d*) To furnish a ready organization for securing or revising necessary international agreements for administrative action in matters of health, and more particularly for examining those subjects which it is proposed to bring before the Standing and General Committees, with a view to International Conventions.

(*e*) In regard to measures for the protection of the worker against sickness, disease, and injury arising out of his employment which fall within the province of the International Labour Organization, the International Health Organization will co-operate with and assist the International Labour Organization, it being understood that the International Labour Organization will on its side act in consultation with the International Health Organization in regard to all health matters.

(*f*) To confer and co-operate with international Red Cross societies and other similar societies under Article 25 of the Covenant.

(*g*) To advise, when requested, other voluntary organizations in health matters of international concern.

(*h*) To organize missions in connexion with matters of health at the request of the League of Nations, and with the concurrence of the countries affected, within the limits provided by subparagraph (*a*), or by the International Convention of Rome (1907).

The way is now clearer to continue with the practical question which I have assumed to be put. The objects of the organization have been settled and defined in the general terms which I have just given. Representatives of the public health departments of the civilized countries of the world will be collected together to pursue them. What is ready to their hand to begin upon?

The material is really abundant and important, none the less important, perhaps, because the subjects concerned are somewhat technical, and unlikely to make much appeal to popular imagination. We have first a number of health questions connected with frontiers, both sea and land. The measures taken in regard to ships coming from infected ports have in this country a long history, beginning with the now obsolete Quarantine Acts, going on to the International Sanitary Convention of 1903, with which our present practice conforms, and ending with the most recent International Sanitary Convention, that of 1912, the ratification of which was completed only a few months ago. One of the most creditable contributions of this country to the public health of the world resulted from the appreciation which was given in England at a very early stage to the fundamental principles which should govern the action taken by port authorities to prevent the introduction of diseases like cholera and plague, so as to combine a maximum of efficiency with a minimum of interference with traffic and commerce. The international adoption of these principles, though secured by international agreements, has, however, not seldom stopped at the signature of these agreements. Some countries have regarded sanitary conventions as merely giving minimum requirements, and in practice have superseded them by laws and regulations greatly in excess of the principles of the agreements to which they are signatory. Other countries, including certain of the British colonies, have stayed out of the conventions and retained old-fashioned quarantine laws. All these conventions depend in large measure on a system of formal notification to other countries of the first occurrence of plague or cholera in an affected country, but their requirement has often been defeated by the burden of its own formality. Under the conventions the health department of one country does not notify the health department of another, but the information proceeds through diplomatic channels and foreign offices, for which, naturally enough, any report of plague or cholera carries with it visions of disaster, restrictions, reprisals, and other fantasies which attend the unknown, and thus leads, if not to suppression of facts, at least to delay and to studied ambiguity in their presentment which defeats the object of the notification. And perhaps the greatest difficulty with these conventions—the observance of which is of such great importance to commerce as well as to health—is their want of elasticity. The Convention of 1912, drawn up after long conferences and discussions, was ratified only last year. Though in many ways a satisfactory code, and in advance of that of 1903, it is already in several respects out of date—in regard to plague precautions on ships it still treats human plague infection, and not rat plague infection, as the primary consideration; in regard to cholera, it gives no sufficient guide about the carrier; in regard to yellow fever, its requirements do not satisfy, and are not practised by, any of the countries in the yellow fever zone, and they are considered insufficient by India, which is now apprehensive of the introduction of this disease.

Meanwhile, there is an insistent demand, not only from our own administration, but from that of many other nations, for the establishment of international rules which should govern the handling of other infections, such as small-pox and typhus, not dealt with in the present conventions. These are of daily importance, particularly in connexion with the migrations which are beginning, and likely to be continued, from the epidemic-stricken regions of Eastern Europe. The demand for revision here extends to the case of land frontiers, which hitherto have received scant consideration in international conventions. The division of large parts of Europe into new States, the probability that for many years to come small-pox, typhus, cholera, and other acute epidemics may progress westward through the Continent, and particularly the unhappy experience already gained on the borders of Poland and Soviet Russia, make it essential on land frontiers that, on the one hand, strict measures should be taken for observation, detention, disinfection and the like, applicable to persons of all nationalities; and, on the other hand, that these measures, like those for shipping, should be so contrived as to produce the minimum of interference and annoyance in international traffic and commerce.

Now, in present circumstances it is difficult for any busy public health officer to contemplate without dismay the prospect afforded by a new and protracted official international conference to recast and reconsider all these questions.

Many new States will for the first time come into these deliberations; they cover a larger ground than before; and when a solution is ultimately arrived at, there is a prospect that it can only be made effective by a repetition of the diplomatic procedure which delayed us for eight years after 1912, that the resulting document might once again be out of date by the time it is ratified, and that it would, after all, leave us as uncertain as before of the extent to which the Convention, when completed, was observed in practice by the signatory countries.

An official central health bureau, with international authority and adequate machinery, affords the most hopeful way out. It has already been proposed that the next International Sanitary Convention should be framed on broader and simpler lines, leaving details to be filled in by schedules and supplementary agreements. This is feasible if a standing expert authority has the duty of making adjustments as occasion requires to meet advances

in knowledge and changes in the epidemic situation. In an International Health Organization on which all the central health departments of the chief maritime States are represented there should be no difficulty in designating the right men for this purpose, and in securing international approval of necessary amendments without long delays and needless formalities. Such an organization, moreover, could do much to secure that accurate information is obtained regarding the measures taken in each country to give effect to the agreements.

The Geneva resolutions, besides providing for this central body, lay down a new method for the conclusion of conventions on health matters which, it may be hoped, will remove some of the obstacles met with hitherto. The efficacy of this method has still to be tested, but in any case the main cause of past delays—the fact that it has been nobody's business to see to progress—should now be removed.

Another matter requiring attention at the present time is the collection of intelligence regarding the progress and prevalence of principal epidemic diseases. At the Ministry of Health we find this essential not only for our own sanitary administration, but also to meet, as we desire to do, the strongly expressed wishes of our self-governing Dominions for such systematic intelligence. Port medical officers of health who receive from the Ministry the weekly statements of epidemic diseases abroad, which have lately been much expanded and improved through the energy of my colleague Colonel S. P. James, will realize the duplications of labour which result from the present system—indeed, its absurdity, when it is remembered that other countries, like the United States, are laboriously and independently following the same method. At present we obtain a large amount of our information about epidemics by the co-operation of our Foreign Office and through the zeal of British consuls abroad. In existing conditions this is the only way, and is most helpful. But, after all, the consul, himself a layman, has to approach a foreign lay municipality for his facts, and at best can obtain them only for a limited area of the country. Other consuls at the same place are going through the same system of inquiry and cabling to their Governments. For some countries, China, for instance, no efficient substitute for consular information can be suggested. But for many nations it ought to be practicable to replace messages from British representatives in a few centres by a single communication sent to the Ministry of Health by the corresponding department of the foreign country. We are already in England able to give such information either to other countries or to a central office. The practicability of the establishment of a central epidemic intelligence centre in connexion with the new International Health Organization needs to be studied in detail and as soon as possible. It would hasten more than any other measure the codification of epidemic intelligence in countries like France which have not yet developed notification as we know it over here. Given the necessary communications from the periphery, a central transmitting station such as the League of Nations is bound to possess, and the condensing resources of a code, it should not be difficult in a few words to signify each week to all the countries the main facts of each of the principal epidemics which require to be watched. Much less useful matter is daily transmitted all over the world by wireless. The expense should not be great, and would be saved in other directions by every country concerned.

The hygiene of ships, so far as it affects that deserving but often hygienically neglected section of the population termed merchant seamen, is receiving attention on the international side from the International Labour Office, and is being brought into great prominence by seamen's labour organizations all over the world. Its settlement requires international action in which the best and most recent public health knowledge should be incorporated. The Geneva resolutions establishing the International Health Organization have now provided a means by which competent sanitarians can take their proper part in the international regulation of matters like ship ventilation, the construction of crews' quarters, their rations, facilities for cleansing, and the like. The subject bristles with difficulties, but also with great opportunities, and I may express the hope that when proposals on this matter are taking concrete form, the British delegates may have the advantage of assistance from those medical officers of health of port sanitary authorities who have specially studied the hygiene of ships' crews.

Let me refer also to another international measure affecting merchant seamen—their treatment for venereal disease at seaports. This ground has been explored officially by the Ministry of Health, and unofficially by the National Council for Combating Venereal Diseases, and we are convinced that international agreement is both desirable and practicable to ensure that at any large seaport the sailor has access to modern methods of treatment, without charge or disability to himself, without reference to his nationality, and, if I may express a personal view, without cost or prejudice to the shipowner. This treatment should include in-patient treatment where necessary, and a standard form of record of his condition and treatment—forms of record really may have their uses—which he can take with him to the next port.

Nothing approaching this system at present exists, but little consideration is necessary to realize the gain which might accrue from such an international undertaking. The practical difficulty hitherto has been that no one nation has been in position to press the matter strongly on other nations and remove the minor obstacles, still less to secure that the goodwill and assent of other countries, when obtained, is translated into appropriate action.

I may refer to two or three other health questions which seem ripe for international agreement, or study with a view to agreement, and should where necessary be taken up in consultation with the International Labour Office in the interest of the workers. One is anthrax, where at least two things are required: First, the general adoption of a system officially recognizing that raw hides and wool have been disinfected by an approved process at the place of their collection or the port of dispatch. This system, which would produce a great saving and greater efficiency, has been shown to be practicable by the work of Dr. Legge, Dr. Eurich, and others in this country, and the minute attention given to the whole question by the Anthrax Committee and the Home Office. Secondly, there is real need for an understanding about the future of the important Japanese export trade in shaving brushes. The British Government has been obliged, by the demonstrated danger of these brushes, to prohibit their importation altogether. It is undesirable that we should have been forced to this procedure, especially as other countries have not taken corresponding action. The real remedy seems to lie in action in Japan to secure that the hair, usually imported from China, is efficiently cleansed and disinfected before it is made up, under the supervision of Japanese bacteriologists, in whom all the world can have confidence, officially arranged and guaranteed by the Japanese Government.

Then again, to revert to a subject which affects port sanitary authorities and shipping, there is the subject of periodic destruction of rats on ships. There is no reason why a ship should not be overhauled to remove its rats every six months as a routine just as necessary as its repainting, or the overhaul of its boilers. Such a requirement, which would be greatly in the interests of shipowners, as well as of health, could only be effected by international agreement, coupled with a system of intelligence at the central offices regarding the action to give effect to the requirements of that agreement.

There can be no doubt that the work of medical statisticians is greatly hampered by unnecessary differences which at present exist in methods of certifying and of recording deaths. I may draw attention in this connexion to a useful article on death certification contributed by Professor Glaister to the last number of the *Journal of Comparative Legislation*. When one remembers that the vital statistics of Switzerland, for example, are obtained by a system of confidential certification in which the medical cause of death is not stated to friends and relatives, one realizes how large a discrepancy there may be in the comparison of the vital statistics of that country with others in respect, let us say, of alcoholism or syphilis. Then, again, the use by the certifying doctor of "primary" and "secondary" causes of death is a matter in which there are divergencies so wide as to make vital statistics which are seemingly comparable really incompatible in actual fact. Even as between England and Scotland there are a few differences of this kind: a death which is certified as due primarily to

influenza and secondarily to pneumonia will in England be ascribed to influenza, and in Scotland to pneumonia. There must, of course, be substantial differences between countries in regard to the reliability of their death certificates and vital statistics, even between those which are most highly civilized; but, at the same time, a great many points of difference have only to be pointed out and discussed in order to be removed, with great advantage to comparative work. Some effective progress has already been made in this matter on the question of tabulation of causes of death under the headings of the International List, which is revised every ten years. The conference last year at Paris, which completed the most recent decennial revision, was at once an example of the praiseworthy desire of statisticians and registrars to obtain international accord in their "long" and "short" lists of causes of death, and a demonstration of the ineffectiveness of the arrangements which at present exist to bring about that accord in a satisfactory and convenient manner. Anyone who experienced, as I did, the difficulties of discussion of a large number of complicated details by fifty delegates of different nations meeting on four consecutive days from early morning to late night, and trying to make progress without agreed rules of procedure, agenda, drafts, copyists, shorthand writers or interpreters, would not need to be convinced of the practical advantage of transferring such work to a centre where all these arrangements for international discussion are automatically and well supplied.

Another important aspect of international official work lies in the direction of combining efforts to deal with exceptional epidemic conditions. This has already been illustrated in connexion with the advance of typhus and cholera from Russia into Eastern Europe. To check that advance, especially by dealing at the frontiers with the large numbers of refugees, prisoners of war, and the like arriving from the East in mass along the principal railway lines, *en route* to all parts of Europe, is a matter which obviously concerns many Governments very vitally, apart altogether from the humanitarian aspect of the question, which may be considered to affect the whole world. A large amount of voluntary aid has been forthcoming or promised to deal with this situation, especially through the Red Cross agencies, but the conditions in Poland and the other border States has been such that it has been impossible for this voluntary action to be made effective without strong official international backing. Moreover, the resources of the charitable public in the United States and elsewhere have been insufficient to secure the necessary preventive measures on a sufficient and systematic scale. In these circumstances, the League of Nations, as is well known, has made an effort to supply the need by appointing a special epidemic commission and obtaining funds for this work from a large number of the Governments represented in the League. Although these funds are not yet adequate for the purpose, they have even now been sufficient to enable a good start to be made in the most difficult and dangerous area, and the Typhus Commission, with general consent, is now able to attach to itself, or direct the use of, the important auxiliary services which the Red Cross bodies are able to bring in.

Occurrences of this kind are not likely to be numerous, as in all ordinary cases an epidemic-stricken country would take its own measures and be unwilling to call for, or to receive, international official help. When they do occur, however, as to-day in Eastern Europe, or as they may arise to-morrow, say, in the case of pneumonic plague in the East, it is evident that the League of Nations can only act effectively and quickly if it has behind it experts who can appreciate the situation and the needs of the case, and are in close touch with their Governments. The absence of a public health organization in the present case has been one of the serious handicaps to the League in the prosecution of its campaign against typhus.

It may be added that if the Treaty of Sèvres is ratified, still more if it is taken as a precedent for other treaties, the League of Nations will assume a very direct responsibility in regard to quarantine. Under that treaty the League will be required to form a special committee to co-ordinate the practice of the different quarantine stations which deal with the Mecca pilgrimage.

METHODS OF ADMINISTRATION.

Leaving these questions of the work before the organization, we may now consider the further practical question how such work is to be effected. It requires that a body of men should be got together at least once or twice a year from a large number of countries who are persons of some weight and authority in the public health work of their respective Governments, and who, if they are not themselves expert in the particular technical question of the moment, will have been able to obtain or to bring the best technical assistance or advice on the subject. If we were on entirely new ground with no experience, it might be difficult to say that this is likely to be practicable. Fortunately, however, we have the necessary experience. Such meetings to a large extent already take place once if not twice a year at the Committee of the Office International d'Hygiène Publique in Paris, which is to form an integral part of the new organization. This Committee is in one important respect wider than any body could be which only represents members of the League of Nations at the present time, as it includes the representative of the United States Public Health Service. The Office International d'Hygiène Publique was established by the Convention of Rome of 1907 with a constitution which enables it, as a consultative body, to deal with most, if not all, of the subjects which I have mentioned above. The value of the past work of the Office International must not be belittled or overlooked. It is hardly as well known in this country as it should be. The Office has been a very bad advertiser, and, as its meeting place and offices are in Paris and its official language is French, it has been regarded here as perhaps too exclusively a Latin institution. The *procès verbaux* of its meetings are formidable official records which are seldom found outside Government offices, and its *Monthly Bulletin*—which is on sale and, incidentally, at the rate of exchange of to-day, represents a higher public health value than any other periodical known to me that is purchaseable for 5d.—is largely concerned with official regulations, and its abstracts and epidemic intelligence, though very well done, are apt to be a little out of date.

As regards its conferences, I can only speak personally regarding those held since the Armistice under the able presidency of M. Velghe, the Principal Officer of the Belgian Public Health Service. There can be no question of the great practical value of these meetings, which has been proved especially in connexion with the information interchanged and collected regarding the influenza pandemic, the present prevalence of encephalitis lethargica, the practical measures adopted to deal with venereal disease in other countries, and other matters. At the recent sessions, moreover, since the question was raised of providing for international health work on a larger scale and with more important machinery and larger funds, the delegates to the Office International have most materially advanced the consideration of a number of the international questions to which I have already alluded, in particular the revision of the Sanitary Conventions and the proposed agreement to deal with venereal disease at seaports. In general it may be said that the delegates are precisely the men who would be selected by their Governments to represent them on any important international health question involving official action. The British Empire representation has recently been a strong one, as we have been fortunate in including representatives who are either leading public health officers in their respective British countries or have recently held such appointments.

All those who have had to consider the way in which the health obligations in the League of Nations Covenant should be met, and the nature of the problems before us, have agreed that continuity should be secured and that the League would benefit by the experience and personnel of the Office International. Moreover, the Covenant has made it impossible for the Office International to develop in any useful direction by continuing an independent existence. This view by general consent and goodwill has now been adopted in the resolutions of the Assembly. The International Health Organization is to be based on the Office International, which will in future have additional representatives from certain countries like Japan, which are members of the League but have not previously sent delegates to the Office. The League of Nations

system of General Assembly, Council, and Secretariat, has, broadly speaking, been followed in the subsequent arrangements. The Committeee of the Office International, enlarged as indicated, becomes the equivalent of the General Assembly of all the nations. Under the name of the General Committee of the International Health Organization it will continue to meet in Paris once or twice a year and retain its offices there. Its work will be carried on under its former constitution, with such modifications as may be necessary to fulfil its further duties of advising the League. It will, however, be provided with a standing committee, roughly analogous to the Council of the League, which can meet in the intervals of the general meetings, appoint subcommittees, and arrange for expert inquiries, and it is to have a medical secretary and office at Geneva. The Assembly has allotted some £17,000 to the organization for its first year, and it will continue to receive also the relatively small contributions from the signatory Governments which have hitherto supported the Office International.

It may be noted with satisfaction that the official requirements for the working of the organization laid down by the resolutions of the Assembly are, as international arrangements go, relatively simple. Much latitude has been given to the organization to work out its own procedure as circumstances dictate.

It is true that the system could have been very considerably simplified if we could have envisaged the appointment at Geneva of a superman for international health, possessing a large central office and staff, in position to prosecute inquiries in and demand information from the respective national health offices of the world, and to lay down international rules with which those national offices would comply. But no public health department in any country would be prepared to accept this dictation at the hands of any man, however distinguished. And if they were so prepared, no Government would be disposed to accept such a system. There were, indeed, many indications at Geneva of the intrinsic objection held by the representatives of the constituent nations of the League to any international procedure which suggested servitude to a central bureaucracy.

Common action among nations, for purposes such as we are considering, must depend upon the fullest discussion and consideration of the position of each country—even in such technical matters as quarantine laws or death certification or standards of ships' hygiene—and on willing agreement after such discussion. This means a slow rate of progress, of course, but it is necessary, and the originators of the health scheme have recognized it by making the meetings of representatives of all countries—that is, the General Committee which continues the Office International d'Hygiène Publique—the real basis of the organization; the new additions of standing committees and secretariat being the necessary auxiliaries to its efficient work. Any permanent headquarter officers who are appointed will need ability and experience in handling the subjects for inquiry and giving effect to the decision of the international representative body. But these, after all, are qualities exercised every day by medical officers in every important public health service, no more difficult or complicated than managing the health matters of a great municipality. They require good men, but not Napoleons.

Conclusion.

It is permissible, I think, to conclude from this short survey that the International Health Organization of the League of Nations will have before it on its formation a number of important practical matters of hygiene which are ripe for concerted Government action, and already call for an organization representing the official public health services of the civilized Governments of the world; that it will start on these subjects with the advantage of continuing the collaboration which has been obtained in the more limited sphere of the Office International d'Hygiène Publique under the Rome Convention of 1907, and of the preliminary work already done by that Office in several of the subjects awaiting settlement; and finally, that the means and funds placed at the disposal of the organization for meetings, inquiries, and draft agreements, promise to be satisfactory for the purpose.

I think this is quite enough to enable us to wish it a good start and every success on an admittedly difficult road, without prophesying for it a future extension in many other directions which can be suggested, or must even be anticipated if the League of Nations increases its authority and influence, or if, whether through the League of Nations or in any other way, the countries of the world demand in future a much closer degree of international co-operation for objects such as public health. In any event, the outlook for the organization will largely depend on the willingness of the public health services in the different countries to make use of the present opportunity, and the support which these services in so doing receive from their Governments. One satisfactory part of the scheme adopted by the Assembly should be noted. The League of Nations will have its budget control, a certain power of withholding sanction to action proposed by the organization, the right of sanctioning appointments of paid officers, and of receiving reports, but, apart from these, the general working of the organization, the regulation of its internal affairs, and the appointment of staff is left entirely to the organization itself—in other words, to the public health men themselves.

Here is the opportunity of the public health officers, and it is to be hoped that they will not only be willing to seize it—this may be taken for granted—but will find themselves in position to give necessary time and labour to ensure its success, and be supported in their respective countries by departments which realize that practical international action and agreement is a fundamental part of any good State public health policy. As regards countries within or associated with the British Empire we have every reason to anticipate that this support will be given in the Dominions, India, and Egypt, as well as at home.

As I have said so much about this new organization it is only fitting that I should conclude by reference to a few of those to whom the fact that it has now been established by resolution of the Assembly is mainly due. These preliminary steps have not been achieved without labour. Many of us have worked hard at the matter at the Ministry of Health, and much is due to our French colleagues, M. Brisac and Dr. Bernard; to Dr. Lutrario, the chief of the Public Health Service in Italy; to Dr. Hugh Cumming, now head of the United States Public Health Service; to the Japanese representation; and especially to the principal officers of the Secretariat of the League of Nations and of the Office International d'Hygiène Publique, all of whom originally took part in working out the main lines in 1919 at the London Conference under the guidance of Lord Astor. At the Assembly itself the scheme was fortunate in having such able exponents as the Right Hon. G. L. Barnes, M.P., the delegate for Great Britain, and Monsieur Gabriel Hanotaux, for France; their statesmanship and industry piloted it past the not inconsiderable difficulties inherent in the first establishment of technical organizations by the League, and in the official requirement that resolutions of the Assembly can only be obtained by a unanimous vote of all the nations represented.

A NEW PRINCIPLE IN THE SURGICAL TREATMENT OF "CONGENITAL CLEFT PALATE," AND ITS MECHANICAL COUNTERPART.

BY

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I.—THE PRINCIPLE.

By H. D. Gillies.

I believe that the revolutionary principle outlined below, if adopted by surgeons handling cleft palates, will lead to a very great improvement in the results of these difficult cases. My very limited experience does not allow me to make any sweeping statement of facts. I hope, however, that the correctness of this principle will so appeal to the surgeon that he will seldom attempt to repair the hard palate, and never before the eruption of the permanent teeth.

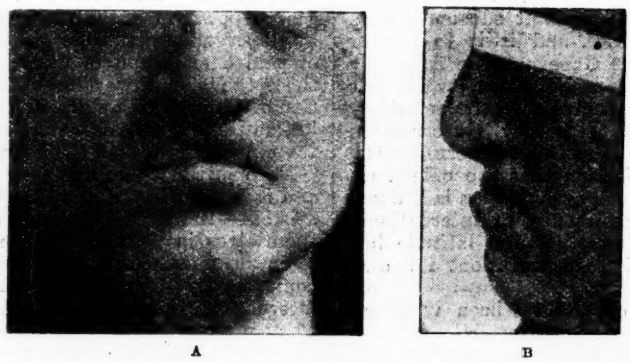
The ideals to be aimed at are: Perfect speech; perfect mastication; normal nasal respiratory function; and, in so

far as a displaced maxilla causes deformity, a normal bony contour. The success of a palate operation is often gauged merely by the completeness of the surgical closure. This should not be so, as it is hoped to show that successful closure of a wide cleft by *any* of the present-day operations is incompatible with the full attainment of the above ideals.

Speech.

The factors producing perfect speech are a united soft palate, with its musculature intact, and lying in such a position that it can be raised and pressed against the pharyngeal wall, and can control the amount of air for the post nasal space, together with a shutting off of the oro-nasal communication left by the congenital defect of the hard palate. Add to this, but of less importance, a set of teeth in a normal position. How are these factors reproduced in the average result of the three main types of operation at present in vogue—the Brophy, the Lane, and the Langenbeck?

The "Brophy" approximation of the maxilla is usually combined with the "Langenbeck" suture of the soft parts, and the more the cleft is reduced by bony approximation the less is the soft palate displaced forward when sutured, and therefore the better is its subsequent action as to air control. In most operators' hands, however, there is usually some destruction of tooth buds and some permanent displacement inwards of the alveolar arches, and the wider the cleft the greater are these defects of mastication, and to a certain extent of speech and breathing. With this type the best soft palate result is likely to be accompanied by a poor hard palate result, as judged, not by the closure, but by the articulation of the permanent teeth.



A B

FIG. 1.—Facial appearance of patient following surgical closure of the hard palate. The backward displacement of the lower part of the nose is shown in B.

The "Lane" type theoretically should produce a good soft palate in addition to a hard palate closure; but too frequently the soft palate is much scarred and tight, and, in addition, lies so far forward in the buccal pharynx that its remaining utility as a speech controller is largely discounted. The hard palate defects of the flap operation are discussed later.

The "Langenbeck" type of approximation frequently results in a good movable soft palate, and a surgical closure of the hard palate; but the wider the cleft the shorter must be the palate, hard and soft, as measured from alveolus to uvula, consequently the new soft palate is in a position anterior to the normal, and by as much as the soft palate is drawn forward its speech control is in proportion adversely affected.

A B

FIG. 2.—Facial appearance following epithelial inlay or buccal skin graft for deformity shown in Fig. 1.

Many of the above defects are frequently counteracted by good orthodontia, massage of the soft palate, speech training, and the natural ability of the patient to overcome obstacles. The majority are not, and the skilled service necessary to these secondary defects is not always available or, if available, effective.

Mastication.

If Brophy were right in his premiss that the width of the cleft equals the spread of the maxillae, then his principle would be correct, but he is not. (See Blakeway, *Lancet*, March 6th and 12th, 1915.) Moreover it is doubtful whether Blakeway's measurements form a true index to the position of the maxilla in regard to the mandible, as a very great percentage, if not *all* cases of unoperated palates, have perfect occlusion (and so mastication) of all the permanent teeth except those involved in the alveolar part of the cleft, which in both operated and non-operated cases are displaced. In addition to the tooth buds that may suffer from "Brophy's" wires, the upper teeth are inclined to be displaced inwards by the operation, as performed in this country.

The "Lane" flap taken from the alveolar region most frequently interferes with the normal eruption of the teeth, and in addition the fibrous tissue in the united palate and in the scarred area of the alveolus causes a chronic and contractile force between the two halves of the maxilla, and produces an eruption of teeth whose bite lies well inside those of the mandible—that is, a narrowing of the maxillary arch as compared with the mandibular.

The same malocclusion frequently results also from the Langenbeck type of approximation, where the same contractile force is in play, to a greater or less extent according to the success of the closure and to the width of the cleft. The earlier the hard palate is closed by the Lane or the Langenbeck type of operation, the greater chance has this contractile factor in producing malocclusion. In any case of malocclusion of the teeth in an operated palate such a serious defect may definitely be assigned to the result of the operation, and would not have occurred had the hard palate been left alone.

Nasal Respiration.

In all three types there is thus a tendency to an undue approximation of the maxillae. Hence a narrowing of the nasal passages. I think that much of the nasal trouble attributed to palate cases is due to the operation of closing the hard palate, and not to the oro-nasal communication. A secondary factor enters this part of the problem, however, in the deformity of the alae and tip of nose so often present before and after the repair of the accompanying hare-lip. A scarred, immobile, and forwardly displaced soft palate must also have its deleterious effects on the upper respiratory mucous membrane. I have also observed in many operated cases a dragging upwards and forwards of the pillars of the fauces and of the important tonsil lying between them. It is not inconceivable that much throat and nose trouble lies at the door of this displaced tonsil, deprived of its normal muscular massage, and so, after the manner of "the house that Jack built," at the door of the surgeon who closed the palate.

Appearance.

Hare-lip deformity not being under consideration, it remains to discuss the effects of the surgical closure of the hard palate on the general facial appearance. Whenever from any of the above causes there is a post-operative and undue approximation of the maxillae, the lip, whatever its other qualities, is liable to be flat, and on a plane posterior to normal. The frontal processes of the maxillae move inwards, and usually backwards, with the displaced bones, and consequently the whole of the lower part of the nose is situated on a plane further back than normal, and gives an appearance characteristically represented in Fig. 1, A and B—an actual case. The cure for this deformity of contour is to be found in the epithelial inlay or buccal skin graft, similar to that described in the writer's book on *Plastic Surgery* (see Fig. 2).

Other Surgical Methods.

The hard palate may be surgically closed by introducing, between the two halves of the maxilla, sufficient tissue from a *distance* to make good the defect; the reader is referred to various neck and other flaps, including the writer's "tubed pedicle," introduced into the buccal cavity, none of which are recommended; and to the introduction into the defect of turbinates and septum grafts, of use in the small defects of the war. It is of significance that Mr. Brophy has on two occasions urged the writer to develop the tubed pedicle method to fill palate defects in lieu of his bone-approximating operation.

Treatment Recommended.

The writer and his colleague, Mr. Fry, consider that closure by means of an efficient dental plate is by far the most simple and efficient mode of treatment; it gives least trouble and provides all that is required of a hard palate as regards feeding, speaking, and breathing, and is applicable in some form or other from earliest infancy. Its very nature prevents any interference with the maxillary growth and eruption of teeth, and saves part of an operation whose mortality is not inconsiderable.

Having decided to make good the hard palate defect by a removable prosthesis, the writer suggests that the two halves of the soft palate be united in as far back a position as is possible. It is not presumed to put forward any fixed operative technique on such flimsy grounds, but the two halves of the soft palate have been separated from the hard and sutured together after producing two raw edges of apposition. This manœuvre leaves a *larger* hard palate defect than prior to operation, and to prevent the raw anterior edge of the newly-made soft palate scarring over and so contracting forward, two methods have been practised—one to take a small flap of muco-periosteum from the hard palate leaving it attached to the soft, and wrap it over the raw area; the other to overlay a skin graft (Thiersch), held in position by an apparatus (Fry, Fig. 3). The latter is more applicable to those cases in which the musculo-mucous-membranous remains of a previously and poorly operated palate have been deliberately detached from a surgically closed hard palate, and made to lie in juxtaposition to the pharyngeal wall. The gap between the hard and soft palate is more efficiently filled by the dental prosthetist than is the usual posterior defect of the soft palate by means of an artificial velum; and the muscular and movable portion of the soft palate works with much greater efficiency as regards speech and deglutition in its new position. The congenital type operation results in a muscular movable soft palate sufficiently near the pharyngeal wall to control air and food, having its palatal aponeurosis represented by the posterior border of the dental appliance, and in a hard palate absolutely closed by the rest of the dental plate. The principle of the treatment of the displaced pre-maxilla in double hare-lip cases is one outside the scope of the present article.

If there be any merit in the above principle, the writer wishes to place on record his gratitude for the lessons in facial contour he learnt from Professor H. Tonks of the Slade Art School, and one time war colleague; and especially to Mr. Kelsey Fry for his tactful handling of an enthusiastic surgeon who first wanted to close all traumatic hard palate defects by plastic operations, and later learnt that surgical success was less efficient and far more difficult to come by than the dental closure. This set the writer thinking in regard to congenital palates, and caused him to evolve the principles enumerated above, which he hopes may alleviate many of the troubles associated with this condition.

Summary.

All unoperated hard palates have normal occlusion of the non-involved teeth.

Nearly all operated hard palates have abnormal occlusion of the non-involved teeth.

Nearly all operated palates have nasal intonation to speech and narrowed features and nasal passages.

Most unoperated adult cases have enjoyed good health.

Most palate cases require a dental plate, whether operated or not.

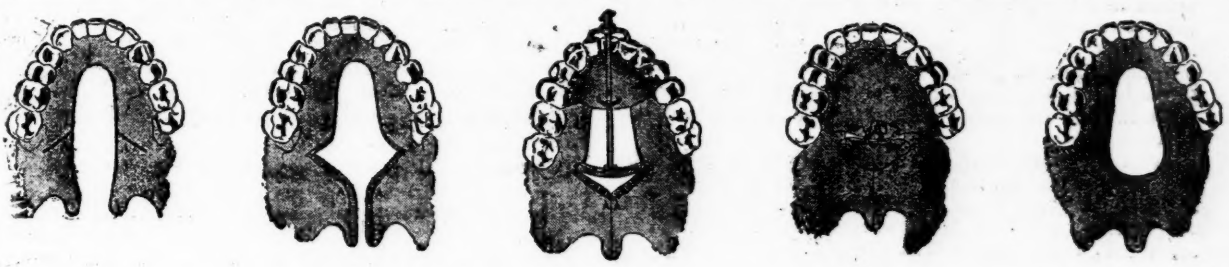
Recommendations.—(1) Suture soft palate as far back as possible in the pharynx by detachment from hard, making the hard palate defect greater; (2) fill the hard palate defect by appliance from earliest infancy, even at the bottle or breast stage.

Time for Operation.—Lip, early. Palate, before speech development or later.

II.—THE PROSTHETIC TREATMENT.

By W. KELSEY FRY.

The prosthetic advantages of this combined surgical and mechanical treatment for congenital cleft palates are, first, the ease with which restorations of the hard palate can be performed by prosthetic means as compared with the difficulty with which the prosthetist is confronted in the case of the soft palate; and, secondly, the absence of distortion of the dental arch, with resulting loss of masticatory function, which is unfortunately only too frequent in cases in which the hard palate has been restored by surgical means.



A B C D E

FIG. 3.—Combined surgical and dental treatment of cleft palate. A, Congenital cleft of hard and soft palate. B, Approximation and lengthening of soft palate, which is completely separated from the hard palate. C, Apparatus for the application of skin graft to the raw anterior edge of palate. D, Apparatus by Mr. Fry for stretching soft palate after healing. E, Final result: Hard palate filled with dental appliance; a long movable soft palate which can approximate to pharyngeal wall and give good speech. (Diagrams by S. Hornswick.)

The aims of dental treatment for these cases may be considered under the following four headings:

1. To aid feeding until such time as the surgical operation is thought advisable.
2. To construct an appliance to hold the epithelial inlay in position at the time of operation.
3. To construct an appliance to maintain the surgically restored soft palate in its correct position and, if necessary, to stretch it in a backward direction so as to enable it to make contact with the posterior wall of the pharynx.
4. To construct a permanent prosthetic appliance to restore the loss of the hard palate and, if necessary, the anterior portion of the soft palate.

1. *To Aid Feeding until Time of Operation.*—When the cleft only involves the soft palate and a small portion of the hard palate, it is only necessary, in order to aid the infant in feeding, to use a specially constructed feeding bottle, by which the liquid is projected into the mouth by means of hand pressure. If the cleft is of a more extensive character, it becomes necessary to construct and fit an obturator on to the teat of the bottle, which will thus prevent food being regurgitated through the nose.

2. *To Construct an Appliance to Hold the Epithelial Inlay in Position.*—Various types of appliances may be used for this purpose, depending on the nature of the individual case and on the presence or non-presence of teeth. The apparatus should be constructed before the operation and should be easily removable. It is also essential that it should be easily adjustable, as it is impossible to locate before the operation the exact position of the anterior edge of the soft palate requiring the skin graft. Fig. 3 c shows a general type of appliance which may be used for this purpose.

3. *To Construct an Appliance to Maintain the Restored Soft Palate in Position.*—When it is only necessary to maintain the soft palate in its new position an appliance

should be constructed which will accurately fit the posterior part of the remaining perforation of the palate and thus prevent it being drawn forwards by any resulting scar tissue. It is essential that this appliance should be constructed as far as possible before the operation, as it is necessary that it should be inserted immediately after the appliance holding the skin graft in position has been removed. In cases where it is necessary to stretch the new soft palate in a backward direction advantage is taken of the fact that the combined action of the muscles of the soft palate is in a backward and upward direction. A prosthetic appliance is constructed which will cause gradual pressure to be made upon the anterior portion of the new palate, thus stretching the soft tissues uniting the hard palate to the soft palate, and allowing the muscles to carry the soft palate as a whole in a backward and upward direction. The appliance should be continued in use until the soft palate is able to make contact with the posterior wall of the pharynx when in contraction, as this state is essential for perfect function of speech. Fig. 3, D, shows the main features of a type of appliance which may be used for this purpose, the details of which vary according to the age of the patient and the number of teeth present.

4. *To Construct a Permanent Prosthetic Appliance to Restore the Loss of the Hard Palate.*—The permanent appliance merely consists of a dental plate which covers over the remaining perforation of the hard palate, except at its posterior border, where it should penetrate slightly into the cavity, thus making sure contact between the soft palate and the prosthetic hard palate, and at the same time preventing contraction of the soft palate. When it is necessary to restore by prosthetic means the anterior portion of the soft palate, this should be done by means of velum rubber, otherwise the whole appliance can be made in hard rubber or a combination of gold and hard rubber.

From the above brief description it will be noted that the permanent appliance necessary in this combined surgical and prosthetic treatment is of very simple construction and of a permanent nature, thus obviating continual dental treatment in after-life.

THE TREATMENT OF SPRUE BY MASSIVE DOSES OF SODIUM BICARBONATE.

BY

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In carrying out, some time ago, certain researches on sprue, I noticed that to render strongly alkaline the urine of patients suffering from this malady it was necessary in most cases to give sodium bicarbonate in much larger doses and for much longer periods than in normal individuals or patients suffering from certain other diseases; the alkali tolerance was therefore increased. During this investigation I noticed that the administration of massive doses of bicarbonate, instead of the usual small or moderate doses so often given in the malady, had frequently a most beneficial effect, especially as regards improvement in the intestinal symptoms, and seemed to help greatly the action of the dietetic treatment.

The routine method of treatment I now use in sprue is generally the following: The patient is kept at complete rest in bed and is placed at first on a strict milk diet. The mouth is kept scrupulously clean by using a diluted alum-carbolic mouth-wash.

Glycer. alum Glycer. ac. carbol.	... ...	āā 3iv
Aq. rosae		ad 3iv

One teaspoonful to a tumbler of water.

And when painful patches on the tongue are present, a cocaine-carbolic mouth-wash will be found useful.

Cocain	gr.v
Ac. carbol.	3j
Glycer. borac.	3vj
Aq. rosae	ad 3iv

Half to one teaspoonful to a tumbler of water.

A mild alkaline tooth paste should be used to brush the teeth with several times daily. Quite a number of private patients I see come to me toothless; apparently the first advice most of them had received on arriving in Europe was to have all their teeth extracted. I have never seen, in cases of genuine sprue, the course of the disease arrested by such a procedure, and I strongly deprecate it, except in those cases in which the sprue condition of the mouth is complicated by true severe pyorrhoea. If there is history of recent amoebic dysentery—and this is in my experience very often the case—I give at once a course of six or twelve emetine injections.

In addition to these measures, the patient is placed on an intensive alkaline treatment, which is carried out (*a*) by giving very large doses of sodium bicarbonate by the mouth, and (*b*) by intravenous injections of a 2 or 4 per cent. bicarbonate solution.

In a number of cases the administration of large doses of bicarbonate by the mouth is sufficient. It is given in drachm doses, 1 drachm three times daily for the first three days, 2 drachms three times daily for eight or ten days, and afterwards 3 drachms or more three times daily for several weeks. No untoward effects are noticed, but not rarely the patient feels and looks somewhat drowsy for a few days. If the drowsiness becomes marked the dose should be decreased. Papain, takadiastase, pancreatin, etc., may be added to the bicarbonate, but the effect of these digestive drugs is not very brilliant in the acute stage of the malady, and I generally omit them altogether during the first weeks of the treatment; later, such preparations, and especially pancreatic extracts as emphasized by Brown, are useful. When the diarrhoea is very severe 5 to 10 grains of salol may be added to the bicarbonate, but powerful astringents should always be avoided. The addition of a little salol to the powders is also useful when the urine becomes too strongly alkaline. In those rare cases in which there is constipation, magnesium carbonate gr. x–xx may be substituted for salol.

The standard formula of the powders is:

Pulv. cinnamom.	gr.ss
Pulv. ipecac.	gr.ss
Pancreatin, papain, or takadiastase	gr.iij
Salol	gr.v
Sod. bicarb.	3iij

The powders should be given in half a tumbler of water. The amount of the ingredients should be varied according to the symptoms presented by the patient, as already stated, and some of the drugs (cinnamon, ipecacuanha, pancreatin, salol) may be left out altogether. At times in conjunction with the powders I have found it useful to administer bile salts (sodium taurocholate gr. ij in cachets t.d.).

In certain peculiar cases of sprue characterized by severe asthenia and a distinct hyperpigmentation of the skin, in addition to the bicarbonate treatment, I have given adrenalin with good results.

I have used intravenous injections of sodium bicarbonate so far in six cases, always in combination with the internal administration of large doses of bicarbonate as described above. Ten to twenty ounces of a 2 or 4 per cent. solution of bicarbonate is given slowly every day or every other day until twelve injections have been given; then the patient has a rest, but the intensive alkaline treatment by the mouth is continued. After an interval of one or two weeks another course of injections is given, and a third course may be necessary after a further interval. The intravenous injection should be given preferably by the gravitation method, observing all the precautions commonly used in intravenous therapy. In the sterilization of the solution care should be taken to prevent any excessive formation of the carbonate, and this end is best achieved by taking the precautions suggested by Sellard—namely, the bicarbonate solution should be put in strong narrow-mouthed bottles which are filled almost full in order to reduce the air space to a minimum, tightly-fitting stoppers being used. As an additional precaution, these bottles can be sterilized in an atmosphere of carbon dioxide; this can be easily obtained by raising the autoclave to the boiling temperature, while water at the boiling point is provided at the bottom of the autoclave, and a handful of bicarbonate is thrown into the hot water.

I have used the bicarbonate treatment here described in a large number of cases, and in 11, most of them private patients, I have been able to follow the course closely. My experience has been that sprue cases having this treatment, in addition to the usual dietetic measures, improve more rapidly than patients having only the

dietetic treatment, though of course there are exceptions. It is interesting to note that the intestinal symptoms seem to be much more beneficially influenced than the mouth symptoms.

As regards the mode of action of the intensive bicarbonate treatment, I have very few remarks to offer. At one time I believed that large doses of bicarbonate by decreasing the acidity of the intestinal contents might check the growth of monilia fungi, considered by some authors to be the true cause of the malady, and by Low and myself to be merely the cause of certain symptoms, as, for instance, the frothiness of the stools. If recent hypotheses concerning the etiology of the malady be proved correct, then a different explanation will have to be found. At any rate, there appears to be little doubt that in sprue a certain degree of acidosis is often present, and that an intensive alkaline treatment is indicated.

Conclusion.

The administration in sprue of massive doses of sodium bicarbonate by the mouth and intravenously, in conjunction with the usual dietetic measures, gives satisfactory results in a large number of cases, especially as regards the intestinal symptoms of the malady.

ANGINA PECTORIS WITH AURICULAR FIBRILLATION.

BY

HAMILTON M. SANDISON, M.B., CH.B.EDIN.

With a Note by FREDERICK W. PRICE, M.D., F.R.S.Edin.

THAT auricular fibrillation may coexist with angina pectoris is demonstrated in the case of M., a woman aged 72. The value of digitalis when its administration is controlled, not by its empirical dose but by its therapeutic effect, was evident in the treatment of the case.

M. has suffered more or less all her life from cardiac affection, but, notwithstanding the advice of her physician, has for the past ten years led a strenuous life. On several occasions in recent years, she has been compelled by a feeling of general and cardiac weakness to rest for two or three weeks in bed, and to take 7 or 10 minims of tincture of digitalis thrice daily. She regained strength during these rests in bed, but the action of the heart remained rapid and irregular.

In July, 1920, she had a more serious breakdown, associated with breathlessness on exertion, palpitation, frontal and occipital headaches, and several paroxysmal attacks of pain of varying severity. This pain, undoubtedly that of true angina, was situated in the region of the heart; it was sudden in onset, and associated with a feeling of tightness in the front chest, mental perturbation, intense anxiety, and a sense of numbness in the left arm.

The pulse was completely irregular, with a ventricular rate of 124, many of the ventricular contractions not being registered at the wrist. The systolic blood pressure was undoubtedly raised, most of the beats registering 210 mm.; the wall of the brachial artery was thickened. The left border of the heart was one fingerbreadth outside the nipple line, the right border two fingerbreadths to the right of the sternum, and the note in the neighbourhood of the junction of the manubrium sterni and right intercostal cartilages and spaces was impaired. There was an apical systolic murmur, propagated to the axilla, and the second sound in the aortic area was rather accentuated. There was an absence of albumin in the urine.

Dr. Frederick W. Price, who was called to see the case, confirmed the diagnosis of auricular fibrillation and true angina pectoris. It is accordingly of special interest to find that in the chapter on auricular fibrillation in his valuable work *Diseases of the Heart*, he states: "It would appear, however, that patients suffering from auricular fibrillation are exempt from definite attacks of angina pectoris." Dealing with the etiology of auricular fibrillation, in the chapter referred to, two main groups of cases are described: "(1) Those with a history of rheumatism, and (2) patients suffering from myocardial degeneration. In the case of the former the condition occurs more commonly in early adult life, and the patients frequently have valvular disease—more often mitral than aortic disease, and more especially mitral stenosis. In the second group of cases the condition is more common after middle age." M.'s case probably belongs to the first group, since there is a definite rheumatic history, and in view of the long duration of the illness and the presence of mitral regurgitation.

The etiology of the angina pectoris is, perhaps, not so certain; but the supernormal blood pressure, the evidence of thickening of the wall of the brachial artery, and the accentuation of the aortic second sound point to arterial degenerative changes, while the impairment of percussion note in the aortic area suggests the possibility of fusiform dilatation of the ascending aorta.

M. was confined to bed for four weeks, and then very gradually allowed to resume a more normal life. Only a very small quantity of fluid was allowed with each meal, and the total intake of fluid did not exceed 1¼ pints a day. Tincture of digitalis was administered during the first week in 15-minim doses thrice daily. At the end of the week, as there was no appreciable improvement, the dose was increased to 18 and ultimately 20 minims. During the second week there was obvious improvement, the ventricular rate gradually falling to 84. As there was now some complaint of general depression, headache, and giddiness, the digitalis was stopped for forty-eight hours, and then recommenced in 15 minim doses. It was found possible to continue with this dose, and the ventricular rate ultimately diminished to 74, and the pulse became much less irregular. The systolic blood pressure came down to 180 mm., a drop of some 30 mm. Coincident with the remarkable slowing and steadying of the heart's action there was a most gratifying improvement in M.'s general condition.

Note by Dr. Price.—I desire to express my thanks to Dr. Hamilton Sandison for allowing me the opportunity of reading his notes of this case, which he kindly called me to see in consultation. The case was undoubtedly one of auricular fibrillation and angina pectoris. The first statement quoted by Dr. Sandison from my book was written towards the end of 1917, and represented my experience up to that time. Since then, however, I had observed two cases of auricular fibrillation (proved by electro-cardiographic examination) who also suffered from typical attacks of angina pectoris, before seeing the case of M., which made the third.

ANEURYSM OF EXTERNAL CAROTID ARTERY TREATED BY LIGATURE OF COMMON CAROTID ARTERY AND INTERNAL JUGULAR VEIN.

BY

W. A. PEVERLEY, M.B., B.S.DURH., AND J. K. HAWORTH, M.S., M.D.DURH.,

MALVERN, NATAL.

THE following case we think may be of interest and importance.

A Zulu woman, aged about 30 years, came with a tumour of the neck which she said came on after having had a tooth out. There were no signs of injury to her jaw, but she had a swelling the size of a Tangerine orange just below the angle of the lower jaw on the left side. The swelling was expansile in every direction and pulsated visibly. There was a loud systolic bruit over it. The impulse and the bruit disappeared on compressing the artery against Chassaignac's tubercle, and the swelling could be emptied on gentle pressure. It filled up from below on releasing the pressure. The pulsation in the left superficial temporal artery was delayed. The case seemed definitely to be one of aneurysm of the external carotid artery, the only other possibility being a pulsating tumour of the carotid body, and the subsequent history disposed of that possibility.

Following the principle of simultaneous ligature of artery and vein, one of us (Peverley) tied the common carotid artery and internal jugular vein at the seat of election. The after-course was uneventful; the pulsation at once disappeared, and now, six weeks after operation, the tumour is only the size of a small nut, and is hard and fibrous. She had no signs of any cerebral disturbance.

The artery seemed healthy, and she had no syphilitic history, though she had had two stillborn children. A Wassermann test was not done.

It does not appear to be the usual practice to tie the vein as well, though Ceci (Paris Surgical Congress, 1904) proposed the theory and Boari (*Policlinico*, 1905) has found it most successful. It is interesting to note in this regard that Lynn and Shipley (Ochsner, *General Surgery*, 1917) carefully avoided tying the internal jugular vein, thinking, presumably, it added to the risk of the operation. The idea of ligaturing the vein as well as the artery in this case was merely an enlargement of Sir George Makins's principle of simultaneous ligature of vein and artery in

war injuries to blood vessels. It is well to remember that the internal jugular vein cannot safely be tied on both sides.

In the cases recorded up to the present there seems to have been marked success and few or no after-effects when the common carotid artery and internal jugular vein have been ligatured simultaneously.

Memoranda:
MEDICAL, SURGICAL, OBSTETRICAL.

HERPES AND VARICELLA.

THE interesting paper by Dr. Carver in the JOURNAL of February 12th induces me to send notes of a case which has come under my notice.

A child aged 7 years was brought to me with severe herpes of the great and small sciatic nerves. There were large confluent masses of vesicles on the right buttock and sacrum to the middle line, down the back of the thigh to the ham, and a few vesicles on the foot and between the toes; the leg below the knee was livid and oedematous. On about the third or fourth day isolated vesicles appeared on the face and forehead, one on the mucosa at vestibule of nose, a few on the trunk and arm, and one on the left leg. These vesicles appeared first as inflamed pimples, then became distinct vesicles which dried up, leaving a small scab. In appearance they were exactly like the pocks of chicken-pox, and if taken by themselves would have been enough to diagnose a mild attack of this disease. The pain in the leg affected was very intense.

Enfield. FRED. TRESILIAN, M.D., F.R.C.P.

THE following note may be of interest in view of Dr. Carver's letter in the JOURNAL of February 12th:

An only child had well marked chicken-pox, the rash appearing on January 16th last. On February 7th the grandfather, who lives in the house, developed a small "herpetic" eruption over the second costal cartilage on the left side and an isolated spot above the left sterno-clavicular joint. None of the spots became very vesicular. This would be a converse instance to that mentioned by Dr. Carver. The interval was twenty-two days from the appearance of the chicken-pox, but being an only child there was no real isolation.

Monkstown, co. Dublin. R. L. HEARD, M.B.

THE following cases have some bearing on the alleged association of herpes and varicella:

1. An elderly lady had shingles in 1903. Six weeks after her attack commenced her daughter and son-in-law, who lived with her, were taken ill on the same day with an eruption which their doctor diagnosed as small-pox. The diagnosis appears to have been made because there was an epidemic, supposed to be small-pox, at Cambridge, and the man occasionally travelled in a train which came from Cambridge. As the wife was not exposed in the train, and she and her husband developed the rash on the same day, it seems reasonable to suppose they were infected from the same source—that is, by the patient with shingles.

2. A child, aged 6, living in an isolated country house in a park, developed varicella in April, 1919. The only possible source of infection was that he had, two weeks before, visited a house where the farmer's wife was suffering from shingles.

3. A lady developed shingles on December 29th, 1919. On February 8th, 1920, one of her children, aged 5, developed varicella, and a fortnight later her other two children followed suit. There was no other possible source of infection to be discovered. The interval between the incidence of shingles in the mother and chicken-pox in the child was forty-one days, but the child was not necessarily infected at the commencement of the mother's illness.

4. A boy, aged 14, in March, 1920, caught varicella from his brother, and infected his sister. He had a few vesicles scattered over his body, but between the fourth and tenth left ribs posteriorly was a very copious eruption resembling an extensive eruption of herpes. This looks like a connecting link, as there was nothing to explain the localization of the rash in this neighbourhood.

Bedford. W. GIFFORD NASH, F.R.C.S.

IN view of the interest excited by the paper of my friend Dr. Carver in your issue of February 12th may I record the following facts?

On January 29th I was attacked with herpes of the left musculo-spiral nerve. For two days previous to the onset of the rash I had some considerable smarting and constant pain all along the course of the subsequent site of the rash, especially at night, and during that period I was convalescing from a rather heavy nasal catarrh.

On February 14th my wife developed varicella, at which time she was convalescing from a severe nasal catarrh. The symptoms and course of this ailment were typical, and I think that it is almost the severest attack of varicella I have seen in my thirty-eight years of medical practice. The rash was profuse and covered practically every part of the body, including the soft palate and pharynx. Thus my wife contracted the varicella sixteen days after I developed herpes, which agrees with Dr. Carver's statement.

Years ago Hilton Fagge stated that varicella rarely occurred in children over the age of 10, and that most writers stated that they had never seen it in adults. It seems to me that the chief point of interest in these cases hovers round the question as to whether this disorder really is varicella, or whether it is not some modified form of herpes zoster. Can anyone tell me if any such cases of herpes-varicella infections have been recorded as occurring in children? We know that herpes zoster is not uncommon in children, and although I have seen a good many cases of varicella in my time, I do not recollect having ever seen a herpes-varicella infection in childhood, and but one other case in adults.

It is, I think, agreed that whereas the fluid from even the mildest eruption of variola is capable of conveying the disorder by inoculation, all, or almost all, attempts to inoculate varicella in the same way have failed. Has any attempt in this direction been made with the fluid of herpetic eruption, and if so, what has been the result? Has it produced herpes or varicella, or has the result been *nil?*

I may say, in conclusion, that I had not attended or been in contact with a case of herpes or varicella for a considerable time, and my wife, so far as she is aware, had not been in contact with any case of varicella, nor had she varicella during childhood.

Torquay. G. YOUNG EALES, L.R.C.P., M.R.C.S.

THE following cases have just come under my care, and in view of recent memoranda on the subject in the JOURNAL, I send particulars:

On January 8th last Mrs. B., aged 44, consulted me. She complained of pain in the right arm of a sharp, shooting character, which commenced about the middle of the upper arm, and radiated into the axilla and back of the shoulder. On examination I found a widely distributed and well-marked rash of herpes zoster with clusters of vesicles on the back of the shoulder, inner aspect of upper arm, into the axilla, and on to the chest. On January 22nd her son, aged 13 years, developed typical chicken-pox of a somewhat severe character. The following day the other boy, aged 14½ years, also showed marked chicken-pox.

There was no chicken-pox in the district, none reported from the school attended for two years past, and no trace of contact whatever.

This occurrence would appear to strengthen the contention that there is a common infective agency in herpes and varicella. Another observation common to both is that seldom or never is there intercurrent affection or complications in either disease, and any fatality *per se* I should think does not exist. In passing, it is of a little interest to note that both the boys above referred to, now strong sturdy youths, were born in Guy's Hospital by Caesarean section.

J. GORDON MCDOUGALL, M.B., Ch.B.Edin.

Chadwell Heath.

FROM time to time cases have been reported in which an eruption of herpes was followed within a few days by varicella. Such a case occurred here some weeks ago, and in view of the discussion at present proceeding as to whether there is an etiological connexion between these conditions, it may be pertinent to publish it:

On January 24th a little boy, W. J., was brought to the out-patient department of this hospital for circumcision; when his clothes were removed a typical group of herpes zoster vesicles was found on the left side of the thorax about the sixth intercostal space; the rest of his body was carefully examined for spots, but none were found. His temperature was taken and found to be 98.4° F. Two days later a varicella rash appeared on his chest and back, and his temperature was then 100° F. The eruption was moderately abundant, and the case subsequently ran the ordinary course of varicella.

Inquiry from the mother revealed the fact that a younger brother had had chicken-pox three weeks before; no person in the household was known to have had herpes.

J. P. MARTIN, M.A., M.B., B.Ch.

Royal Southern Hospital, Liverpool.

Reports of Societies.

"TWILIGHT SLEEP."

AT a meeting of the Edinburgh Obstetrical Society, held on February 9th, Dr. WILLIAM FORDYCE, President, in the chair, Dr. F. W. N. HAULTAIN read a paper on the above subject. Some years ago with Dr. Swift he published the highly satisfactory results of the management of labour under "twilight sleep" in the Edinburgh Maternity Hospital. Since that time a considerable diversity of opinion had been expressed both by the medical profession and by the lay public as to its merits. Though as a rule admitting its benefits, the medical profession had found the supposed difficulty of its adoption in private practice a serious drawback. With the lay public it had been a theme of discussion of the bitterest character. Its ardent opponents had decried it as a most dangerous procedure fraught with the most appalling results. Since his previous paper, he had employed it in every case where the consent of the patient, hospital or private, was obtained—about 800 in all. The results had been correspondingly satisfactory in both. On this occasion he would restrict himself to an account of its employment in private practice. In his last 150 cases thus treated 70 were primiparae and 80 multiparae. In the former there was complete amnesia in 80 per cent. and partial in 20 per cent. In multiparae the amnesia was complete in 50 per cent., partial in 30 per cent., and no effect in 20 per cent., due to insufficient time for the action of the drug to take place, the labour having terminated so rapidly. The treatment adopted in every case was the same. Morphine $\frac{1}{4}$ gr. and hyoscine $\frac{1}{150}$ gr. was given by injection in primiparae when labour was fairly established with pains regular and recurring every ten minutes, and in multiparae whenever definite labour pains were first felt. The patient was put to bed in a darkened room and her ears stuffed with cotton-wool, so that her attention might not be attracted by anything. After three-quarters of an hour a further injection of hyoscine gr. $\frac{1}{4\frac{1}{2}0}$ was given, and repeated every hour until labour was completed. If she became noisy or restless after the second stage was reached, chloroform was given during the pains, as from the absence of self-control she might be difficult to manage. After the child was born it was immediately removed to another room to prevent its cries from disturbing the mother during the third stage. She was allowed to sleep till the effects of the drug had passed off; this usually took place in about six hours. When she awakened she was usually unaware that she had ever been in labour.

The largest number of doses given was fifty-three to a primipara with a rigid cervix and strong labour pains, whilst the smallest number of doses which induced complete amnesia was four. It was practically impossible to gauge the amount of analgesia, as the feelings of the patient could not be strictly estimated while under the effect of the drug, and the description afterwards was not to be depended on. Dr. Haultain had little doubt that nearly all suffered discomfort during uterine contractions, which often made them noisy and restless, but of which they had no memory afterwards. It was essential to remember the absence of mental control, as much shouting and restlessness, though it conveys the impression of great suffering to attending friends, was out of all proportion to actual sensation. The feeling of well-being shortly after the delivery was over was perhaps one of the most striking beneficial actions, and tended to endorse the absence of conscious suffering. The effect varied in individuals, hence the acute differences of opinion in both medical and lay minds, and the bitter controversy that existed, and the impossibility of giving a definite opinion without practical experience.

Amongst obstetricians this treatment had been decried in private practice on account of the impossibility of giving personal supervision. This, of course, was necessary if the rules of Gauss were closely followed; he regulated the doses by the memory test. For practical purposes such a regulation of doses was unnecessary. The simple rule of giving an injection of $\frac{1}{4\frac{1}{2}0}$ gr. every hour, though perhaps not so scientifically perfect, was sufficient to obtain the benefits required without danger. This could be done by an intelligent nurse in telephonic touch with the doctor.

So far as his experience showed there was no risk either to mother or child. The latter in 3 per cent. was born oligopnoeic—that is, of a blue colour and with very shallow breathing. In each of these cases it recovered spontaneously without treatment of any kind. In four cases the child was born asphyxiated; three of these were after hard forceps traction, and one in a breech presentation with slight delay in birth of the after-coming head. One child was born dead after craniotomy, having had twenty-three doses to favour head moulding. The patient had had two subsequent healthy children under twilight sleep, labour having been induced at the end of the eighth month. No complications were noted that could possibly be attributed to the treatment. In 6 cases labour was induced, and in none of these did the child appear affected by the drug. Forceps were applied thirty-nine times in the 70 primiparae and twice in the 80 multiparae. This he did not consider more frequent since the use of scopolamine, as he had always followed the rule of using forceps if the head was in the pelvis and the second stage had lasted more than three hours in a primipara and two hours in a multipara. In minor degrees of pelvic contraction he preferred to wait much longer, to permit of head moulding, and in these cases scopolamine was of the greatest advantage in diminishing the suffering during the long second stage. He had twice observed patients become so unruly as to be maniacal, trying to bite and refusing to lie in bed. In these cases chloroform was administered deeply and it quickly controlled the symptoms. Occasionally with a long labour he gave a further $\frac{1}{8}$ gr. morphine, where much restlessness was experienced before full dilatation of the cervix. Morphine had been credited with being the cause of the oligopnoea. This he was not prepared to admit, as very much larger doses were given in eclampsia without such evil effects.

Dr. BALLANTYNE had not used this method much in private practice because early in his experience with it he had had a stillborn baby, and though he could not say definitely that twilight sleep was the cause of death, he had been very careful about using it since. Careful records had been kept of its use in 320 cases in the hospital, and with the exception of vagaries in some of the patients' behaviour, and some difficulties in resuscitating the babies, it was very successful. He had noticed that where the primary dose of morphine and scopolamine was followed by the birth of the child about 3½ hours afterwards these babies were difficult to resuscitate. Where the labour occurred either under two hours or was considerably later than 3½ hours after the primary injection, there was no difficulty at all. If the infants continued longer in the uterus the effects of the morphine wore off, and if they were born before two hours the morphine had not had time to have a bad effect. He had formed the opinion that the method was a valuable adjunct to chloroform, and it had the advantage, unlike chloroform, of being useful during the first stage of labour.

Dr. HAIG FERGUSON agreed with all that Dr. Haultain had said regarding the use of twilight sleep in private practice. It was not so valuable in hospitals, where the bustle and commotion incidental to hospital work were against its success.

Dr. LAMOND LACKIE gave the statistics of the use of twilight sleep in 91 cases in the Edinburgh Maternity Hospital. The initial dose was morphine $\frac{1}{6}$ grain and hyoscine $\frac{1}{150}$ grain. As regards subsequent doses, $\frac{1}{4\frac{1}{2}0}$ grain of hyoscine was repeated every hour till the head was on the perineum; $\frac{1}{8}$ grain of morphine was repeated in only a few cases. No patient had more than twelve injections and the average number of injections was seven. The results in regard to the mother were good. As regards the children, in 77 cases—that is, 84 per cent.—there was no bad effect. In 9 there was slight cyanosis—that is, 10 per cent. Prolonged artificial respiration was required in 3 babies—that is, 3.3 per cent. In 2 cases there was no apparent cause, in the third the child was born within two hours of the last injection of morphine. There had been two deaths, but in one case version was performed and in the other craniotomy.

Dr. RONALDSON had used hyoscine for the last ten years in private practice, and in practically every case, and he would as soon think of going without it as without chloroform.

Dr. FLETT said he had found the method of enormous benefit in general practice, and if one had an efficient nurse it could be given in every case.

Dr. HENDRY (Glasgow) did not agree with Dr. Haultain regarding the definite interval administration of the drug without any reference to the condition of the patient, because he found that patients were susceptible to scopolamine in very different degrees.

Dr. R. W. JOHNSTONE agreed that twilight sleep was a valuable addition to the methods of treating labour. The best results were obtained when the doctor was in fairly constant attendance, and where the dose was regulated by the patient's reaction.

Dr. F. J. BROWNE, during his work upon stillbirths, had found, out of 300 necropsies, four cases in which he considered himself justified in putting down the cause of the death of the child to morphine-scopolamine narcosis.

Dr. KEPPIE PATERSON said he had given up twilight sleep in practice because of one unfortunate experience with the child.

EXOPHTHALMIC GOITRE.

THE discussion on exophthalmic goitre in the combined meeting of the Clinical Section of the Royal Society of Medicine with the Sections of Medicine and Surgery, which was adjourned from February 11th, was resumed on February 25th, Sir ANTHONY BOWLBY presiding. A report of the opening of the discussion appeared in the BRITISH MEDICAL JOURNAL of February 19th at p. 268.

Mr. DONALD ARMOUR, who dealt with surgical treatment, objected at the outset to the terms in common use for describing the disease, and urged that a wider use be made of the term "hyperthyroidism." He said that in operating he had always used a general anaesthetic. The anaesthetic bogey was disappearing, but it looked like being replaced by another bogey—namely, the possibility of damage to the recurrent laryngeal nerve. This danger need not arise if care and gentleness were exercised in operation. The ligature of arteries had a definite place among the operative procedures. He had been impressed by the excellent results obtained from ligature alone. The ligature of the vessels and the removal of more or less of the gland substance were the only two operations which should have any place in the surgical treatment of the disease.

Dr. FLORENCE STONEY gave particulars of some 200 cases which she had treated by *x* rays during the last thirteen years. Of these, 78 were quite cured and strong after a long interval since cessation of treatment, 66 were much better, 28 were no better; many of the others had been lost sight of. *X*-ray treatment should only be entrusted to a first-class radiologist. If time was of vital importance in any case, surgery might offer the greater advantage; in all other cases *x* rays should be preferred, since they spared the patient the mental upset of operation, sometimes repeated, as well as the pain and risk to life. The disadvantages of *x* rays were the tediousness of treatment—largely obviated by taking the disease in hand early — and the occurrence of telangiectasis and scars, both of which, however, occurred less and less frequently with improvement in technique.

Dr. J. M. H. CAMPBELL brought further up to date Sir William Hale-White's analysis of the after-history of cases at Guy's Hospital. During the ten years 1908–17 reports were available of 127 cases at Guy's, of which 80 or more had been traced, while 8 had died in hospital either from the exophthalmic goitre itself or from terminal affections while this condition was acute. Of the cases traced after discharge, 7 were found to have been completely cured, 26 almost cured and able to live a normal life, 29 much improved and able to do light work, and 11 improved slightly or not at all. A comparison of the results of surgical and medical treatment—the former only applying to a small number of cases — showed much the same proportions in each of these four groups.

Mr. W. H. C. ROMANIS discussed the selection of cases for operation. If all the signs and symptoms were slight and not progressing, medical treatment was often followed by benefit. In moderately severe cases or cases in which any one sign or symptom was present to a marked degree, medical treatment should not be continued for more than two or three months at most. Operation should not be urged in those cases where the patient was very unwilling to undergo it. The removal of large portions of the thyroid gland was the procedure which gave the best results. One lobe, the isthmus, and a quarter of the other lobe was the minimum which should be excised. After thyroidectomy it was very common to find a greater improvement in the subjective symptoms than in the physical signs.

Mr. A. J. WALTON spoke of the results in 101 cases in which operation had been done; 52 were completely cured, and 23 relieved, and there were five deaths. These were selected cases in the sense that they had all received medical treatment; they were the failures of medical treatment. It was his custom never to operate on cases during the first six months. His opinion of *x*-ray treatment was unfavourable. He advocated medical treatment (1) if the symptoms had been in evidence for less than six months; (2) as a preliminary to surgical treatment; (3) before a second operation in a case of relapse, where there was an enlargement of the remaining portion of the thyroid after operation. He divided the disease into three groups: the type which was predominantly vascular, the type which was predominantly nervous, and the type in which hyperthyroidism was in association with adenomata. The last ought not to be included with exophthalmic goitres. The vascular type did extremely well after operation, the nervous type not so well, though he thought operation should be done. He always did a partial thyroidectomy; he had never done ligature of the artery, though he did not condemn that operation.

Mr. J. E. ADAMS thought that the unfortunate results obtained by surgery in the past were due to the use of chloroform as the anaesthetic, and to the failure of surgeons to recognize the necessity for gentle handling in thyroid surgery. The great merit of local anaesthesia was that it compelled the surgeon to be gentle. He suggested that radium therapy might be combined with surgery. A hemithyroidectomy might be done under local anaesthesia, followed by the burying of radium in the wound for a number of hours.

Dr. F. HERNAMAN-JOHNSON was doubtful if *x*-ray treatment, unless used in large doses, had any inhibitory effect on the gland, yet its beneficial influence was very marked in many cases. He believed that the good effects were constitutional rather than local, were general and not specific. Small and frequent doses were necessary, at any rate at the beginning of treatment. In difficult chronic cases it might be well to use galvanism as well as *x* rays. *X* rays and electricity were part of the medical treatment of exophthalmic goitre, and the time to call in their aid was when the disease was first noticed.

Professor H. G. EARLE gave a short description of the basal metabolism test for hyperthyroidism, demonstrated an instrument, and showed a number of graphic tracings of the measurement of oxygen consumption.

The discussion was then further adjourned until Friday, March 11th.

CONGENITAL SYPHILIS.

A DISCUSSION on congenital syphilis, its diagnosis and treatment, was opened on February 25th at the Royal Society of Medicine, in the Section for the Study of Disease in Children, with Dr. FREDERICK LANGMEAD in the chair.

The Limits of the Wassermann Reaction.

Sir HUMPHRY ROLLESTON restricted his opening remarks chiefly to the suggestion of lines for discussion. He spoke first of the limits of the Wassermann reaction as a means of diagnosis, and then of the influence of congenital syphilis in favouring the onset of other infections, in leading to changes in the endocrine glands, and in bringing about other conditions not generally regarded as being due to syphilis nor obviously connected with endocrine gland lesions. With a certain number of exceptions, most of which hardly came within practical range, a positive Wassermann pointed to the presence of active syphilis and to the need for antisyphilitic treatment, but the converse did not hold good, and the question for consideration was, in what circircumstances should they hesitate to accept a negative Wassermann as evidence that syphilis was absent and treatment unnecessary? The syphilitic infection, after severely damaging an organ, might die down or die out, and although its past effects were obvious, it was no longer an active factor. In such cases, if the

Wassermann test was negative, it might logically be argued that antisyphilitic treatment was unnecessary; the conditions which he had in mind were insufficiency of the glands of the internal secretion and of the blood-forming organs. Was a negative Wassermann of the blood to be regarded as final evidence that antisyphilitic treatment need not be undertaken, and that the possibility of further activity of the spirochaete, perhaps on the endocrine glands already affected, could be ignored? He suggested that at present it was impossible to adopt as an absolute proposition that in the presence of syphilitic stigmata a negative Wassermann eliminated the possibility of existing syphilis.

Remoter Effects.

In the second part of his remarks Sir Humphry Rolleston pointed out that congenital syphilis was a factor disposing to other infections. A number of acute infections were so well marked as often to mask the underlying syphilis. The influence of syphilis was also very important in the causation of lesions of the endocrine glands, and so indirectly of syndromes which were not necessarily characteristic of syphilis. The pituitary body might be infected, and its infection might perhaps be accompanied by a negative blood Wassermann, although a cerebro-spinal Wassermann might be positive. Among various other conditions, obesity was seldom recognized clinically as a result of congenital syphilis; nevertheless it occurred. Another problem of extreme difficulty was the part which insufficiency of the endocrine glands played in some of the obscure bone diseases. There were at least three ways in which congenital syphilis might be imagined as giving rise to chronic interstitial nephritis: by means of the fibrotic process following on an acute interstitial nephritis, by the production of arterio-sclerotic kidney, and as a result of damage to the endocrine glands, the last having a definite bearing on infantilism. No discussion of the remote effects of congenital syphilis would be complete without a reference to rickets, and he touched in passing on the recent interesting suggestion that syphilis so damaged the endocrine glands that the bones were sensitized to such immediate causes of rickets as diet deficiency.

Surgical Manifestations.

Mr. O. L. ADDISON, who opened the discussion from the surgical side, said that the manifestations of congenital syphilis which came to the surgeon were, on the whole, less puzzling than those which came to the physician. The chief factor in the successful diagnosis of most diseases was to be on the watch for them, and it was a commonplace that syphilis was the best masquerader of them all. At present they seldom saw the severe manifestations of congenital syphilis except in infancy, and with antenatal treatment it might be hoped that even in infancy they would become rare. The most constant feature of infantile syphilis was osteomyelitis of the long bones. He had frequently caused radiographs to be taken in doubtful cases to confirm the syphilis diagnosis. The diagnosis offered little or no difficulty if such radiographs were taken. In the second period, following upon infancy, bone and joint affections were still the most marked manifestations. Periostitis was very common from three years onwards, either diffused or localized, and was frequently found in either form on the tibia, though it might occur on the other long bones as well. Mr. Addison showed a large number of radiographs illustrating the various bone conditions. He added that he had only had one case in which he was able to prove the presence of both syphilis and tubercle. He believed in a course of novarsenobillon *plus* mercury, and of the two drugs he did not doubt that mercury was the more valuable.

Juvenile General Paralysis.

Sir FREDERICK MOTT exhibited some photographs and photomicrographs relating to juvenile general paralysis and tabo-paralysis as a result of congenital syphilis. These included cases of general paralytics as old as 16 years in whom the sexual organs were quite undeveloped. Long ago he was convinced that syphilis was the cause of general paralysis, and not alcohol or sexual excess, or any of the other causes which had been sometimes cited, and he felt that the only way to demonstrate this was to collect cases of juvenile general paralysis and prove their syphilitic origin. About half the cases collected showed definite signs of congenital syphilis on the body, but the remainder had no signs on the body exteriorly, and he had to get the family history, which he was able to do in the majority of cases. The family history seemed frequently to show a record of three or four miscarriages followed by the birth of a juvenile paralytic. The juvenile paralytic seemed to be the last development of the familial disease. With regard to the infection of the pituitary body, there was no doubt that spirochaetes were in the brain in every case in which there was a positive reaction of the cerebro-spinal fluid, but he had examined some pituitaries and had never seen the spirochaetes in the pituitary body.

The Wassermann Reaction from the Clinician's Standpoint.

Dr. LEONARD FINDLAY (Glasgow) said that, although most of the eulogies regarding the Wassermann reaction had emanated from the laboratory, he as a clinician had the greatest faith in the reaction, which for all practical purposes he regarded as specific. He took a number of cases of what might be supposed to be the early manifestation of syphilis—cases of different skin manifestations sent up by his colleagues to the hospital—and divided them into four classes: (1) those which, clinically, were definite syphilis; (2) those with regard to which he was doubtful but was inclined to think syphilitic; (3) those which he was inclined to regard, though still doubtful, as not syphilitic; (4) those which, in his opinion, were definitely not syphilitic. The results of the subsequent Wassermann test were as follows:

	Positive Wassermann.	Negative Wassermann.
Class 1	... 161	... 2
Class 2	... 31	... 10
Class 3	... 11	... 40
Class 4	... 0	... 58

The mothers of syphilitic infants showed a positive Wassermann reaction in 76 cases; a negative in 10. He had also analysed the Wassermann reaction obtained in a considerable number of different conditions, and in presenting a list of these he pointed out that of the 13 cases of congenital heart disease included not one showed a positive reaction, and of the 14 cases of marasmus one was positive and the others negative. His general impression from working on Wassermann reactions in a children's clinic was that congenital syphilis was nothing like so frequent as was commonly stated. The only way to arrive at a conclusion on the subject would be to obtain the Wassermann reaction in a large number of cases admitted both to the indoor and outdoor departments of the hospital, and, so far as he knew, this had only been done in America, where the proportion of congenital syphilitics was stated to be 2 per cent.—meaning 2 per cent. of the ailing child population only. If a positive Wassermann spelled syphilis, a negative Wassermann spelled no syphilis—at least, in the presence of no active manifestations. He condemned treatment by mercury alone; 70 per cent. of the children he had treated in the old days by mercury alone had died, but with the introduction of salvarsan and its administration along with mercury (he never used salvarsan alone) the mortality fell at first to 36 per cent. and later to 26 per cent. He had had a good many accidents when attempting to give salvarsan intramuscularly, and preferred the intravenous method of injection. With regard to ante-natal treatment, not only was the child who was born immediately after a course of treatment healthy, but children born subsequently of the same mother appeared to be healthy too. He advocated the encouragement of ante-natal treatment by, among other means, the compulsory notification of miscarriages and stillbirths.

Ante-natal Treatment.

Dr. AMAND ROUTH said that about 16 per cent. of infantile deaths were due to congenital syphilis, and he pointed out that the reduced infant mortality for the years 1917–19 did not hold good so far as the early weeks of the infantile year were concerned. He doubted whether early syphilitic abortions could be prevented by ante-natal treatment with salvarsan, partly because the diagnosis of pregnancy could not be obtained early enough, and partly because, if the infection was sufficiently active, the delicate embryo would be destroyed. With our present knowledge, congenital syphilis could be prevented or cured if every syphilitic mother were treated, not only during pregnancy,

but in anticipation of her next pregnancy, especially if the treatment of the child were continued after birth; for it was clear that the most serious cases of embryonic infection would terminate in abortions or still-births, and that almost all other cases, owing to the infection being latent, were amenable to treatment during pregnancy. To begin the treatment of a congenital syphilitic child only after its birth, when it had probably a positive Wassermann reaction, was very rarely effectual.

Results of Treatment of Children.

Dr. D. N. NABARRO related some of his experiences at the venereal diseases clinic at the Children's Hospital in Great Ormond Street. He said he was in the fortunate position of himself doing the Wassermann tests as well as treating and watching the cases. He was convinced that the Wassermann was an extremely valuable test when reliably done, but it was often not done reliably. During last year he had treated 77 patients with 530 injections. The injections (of, until this year, novarsenobillon) were always made, if possible, into the veins. Several children had had from 18 to 24 injections. He had no doubt that many children had benefited considerably from the treatment. In three interesting cases ulceration of the palate had healed up. He was not sure that, in eye treatment, the condition of keratitis had been shortened. Periostitis had cleared up in a remarkable manner. A certain number of mentally defective children became definitely brighter. But, in his experience, the immediate results in the treatment of congenital syphilis were not so dramatically obvious as in the primary and secondary stages of the acquired condition; and many of the cases died. Of a group of 62 children treated last year, 14 became negative; but of these 14, 5 had again become positive.

Statistics of Blind Children.

Mr. BISHOP HARMAN described the associated symptoms found in 600 cases of children blinded from the effects of congenital syphilis. He stated that the cases were the collection of seventeen years, that they had been under his care for an average time of six years, so that there was ample opportunity for observation. Dividing the cases in two groups as the front or back parts of the eyes showed the most manifest inflammatory effects, he found 398 cases of interstitial keratitis and 229 cases of disseminated choroiditis. Amongst the group of interstitial keratitis the main associated symptoms were: Hutchinson's teeth 265, characteristic physiognomy 115, iritis 128, bad family history 170, scarred mouth 61, bone or joint disease 26, ulceration of nose or palate 15, deafness 63. Among the group of disseminated choroiditis, numbering 229, there was optic atrophy in 117, Hutchinson's teeth 97, physiognomy 53, bad family history 115, bone or joint disease 19, deafness 51. Comparing the frequency of the chief associated symptoms of the two groups it was found that the characteristic teeth were present in 73 per cent. of keratitis and in 46 per cent. of choroiditis, bad family history in 47 per cent. of keratitis and 55 per cent. of choroiditis, gross mental disorder in none of the keratitis cases but in 41 per cent. of choroiditis. Bad family history was shown by the high rate of miscarriage, still-birth, infant death, and diseased children. Among 150 syphilitic mothers there were 1,001 pregnancies with only 390 presumed healthy children. Amongst 150 average hospital patients who were mothers there were 826 pregnancies with 654 healthy children, or 792 per 1,000, so that the average mothers produced twice as many presumed healthy children as the syphilitics. Mr. Harman advocated the value of ante-natal treatment.

The discussion was adjourned until March 16th.

ANAESTHETICS IN PLASTIC SURGERY.

A MEETING of the Section of Anaesthetics of the Royal Society of Medicine was held on February 4th, with Dr. SHIRLEY, President, in the chair, and a paper by Messrs. ROWBOTHAM and MAGILL on "Anaesthetics in the plastic surgery of the face and jaws" was read, based on 3,000 cases at Queen's Hospital, Sidcup. After alluding to the physical and mental peculiarities of the type of patient and to the number of times each of them generally required an anaesthetic, the authors divided the cases into those in which the anaesthetist has control of the mouth and those in which he has only the nose at his disposal. In all cases the main difficulty is that of maintaining a proper airway. When the mandible is altogether or largely missing a long blunt instrument is employed through the mouth to hold up the base of the tongue during induction. Technique was described rendering possible the use of nitrous oxide for induction in patients with broken or abnormal jaws. Intratracheal insufflation proved to be the most generally applicable method. The authors had devised means for employing gas and oxygen with this method, generally combining the gases with small amounts of ether. The methods of passing the catheter through the nose and guiding it into the larynx by specially devised instruments were described. Frequently dilatation of the nares by a series of tubes was required, and often a tube was used through each nostril. The use of nitrous oxide, with or without the aid of local infiltration, was described in connexion with superficial flap operations. The necessary steps were described for avoiding chest complications, which are to be feared owing to the length of time required by most of the operations dealt with. These averaged one and three-quarter hours and were often over three hours. In 1,700 cases there had been only four instances of bronchitis and two of pneumonia.

In the discussion which followed, Mr. H. E. G. BOYLE feared that the dilatation of the nose as described was very likely to cause bleeding. His own experience of passing nasal tubes was that although one side of the nose was usually free it frequently happened that it was almost impossible to pass a second tube through the other nostril. He believed that colonic oil-ether anaesthesia was too uncertain for the class of case discussed, and also that the long unconsciousness afterwards was a drawback. His present preference for these operations was a combination of gas and oxygen and CE mixture. Mr. RAMSEY PHILIPS pointed out that a catheter passed through the nose could usually be guided into the larynx by altering the position of the patient's head without using an instrument through the mouth. Dr. W. J. MCCARDIE said that in a large experience of the kind of case dealt with by the authors he had used very simple methods. Nasal or oral intubation with "draw-over" inhalation from a mask or plain gauze had generally given good results. Nasal tubes should have large lumen and be comparatively stiff. There were certain advantages in the use of chloroform for these cases, such as little oozing and quiet respiration and circulation. Mr. KIRKBY THOMAS said that he induced with CE mixture from an open mask, passed a wide rubber tube down into the pharynx and packed this round with gauze, and then passed the delivery catheter of a Junker's inhaler into the tube. The catheter was kept in position by pressure against a safety pin transfixing the pharyngeal tube. Dr. F. E. SHIPWAY considered intratracheal ether far superior to the older methods for these free operations. Nasal tubes frequently caused damage with considerable bleeding, and he believed that there was a risk of conveying septic infection if a catheter were passed through the nose into the trachea. Mr. C. W. T. HIRSCH described a tap for allowing small portions of ether to be taken up when it is required to supplement gas and oxygen with this anaesthetic.

MEDICAL REFORM IN IRELAND.

AT a meeting of the Section of State Medicine of the Royal Academy of Medicine in Ireland on January 14th, the President, Dr. R. J. ROWLETTE, opened a discussion on "Medical reform in Ireland." He gave an abstract of the recent report of the Irish Public Health Council, and expressed the opinion that it gave the foundation for a thorough and statesmanlike scheme of reform. Unfortunately the Government had declined to legislate on it, and the Chief Secretary had given contradicting reasons for this refusal. The scheme might, however, form the basis of legislative action when a normal system of Government again existed in Ireland. It was a hopeful sign that those who represented the political opinions of the majority of the Irish people had serious and sound views on health matters. Sir JOHN MOORE, President of the Academy, read a paper on "Existing hindrances to public health work in Ireland," in which he drew attention to the fact that the Infectious Disease

(Notification) Act of 1889 provided that the local authority should pay to the medical practitioner a fee of half a crown for each certificate sent by him in accordance with the Act if the case occurred in his private practice. This provision was endorsed and extended by the Infectious Diseases (Prevention) Act of 1890. The Tuberculosis Prevention (Ireland) Act of 1908 provided that a fee of one shilling should be paid to the practitioner for certificates in the case of persons treated in public institutions and half a crown if the case occurred elsewhere. The Local Government Emergency Act of 1916 reduced the fee payable for notification to one shilling in all cases. With regard to the sanatorium treatment of tuberculosis, he referred to the extraordinary fact that an *impasse* between the Local Government Board and the local authorities should be allowed to cause serious risk to public health by interrupting the machinery provided under statute for dealing with tuberculosis. Lastly, he pointed out that the recommendations and proposals of the Irish Public Health Council, a statutory body, had been for the time being stultified by the decision of the Government that schemes involving expenditure and not yet in operation were to remain in abeyance.

Mr. BURKE said it was very hopeful to find medical men of the political views and professional standing of Sir John W. Moore and Dr. Rowlette putting Irish public health before every consideration. It was gratifying that such pioneers of public health in Ireland were so explicit in attaching responsibility to the Government for the threatened, and in some places actual, suspension of the health services in Ireland. The present deplorable condition of public health in Ireland was for the most part due to the Government's withholding grants which heretofore were given towards public health administration, but now were diverted to meet the awards for malicious injuries. Dr. MOORHEAD said he had been lately studying the financial position of the voluntary hospitals, and concluded that the only hope for the future lay in some form of State subsidy or grant. He hoped that the voluntary basis would always be maintained. When the combined sums of voluntary subscriptions, payments from patients who were able to pay, and municipal subscriptions were added together, there would still remain a deficit, and this deficit he felt must be made good by the State. Even if this were done it would not be necessary to have State control, for the municipalities that subscribed to the hospitals sent representatives to the hospital boards, who were welcome and most useful members. Similar representatives of the State would add strength to the hospital boards in the future.

Sir WILLIAM J. THOMPSON, Registrar-General, said he did not think even the profession fully realized the amount of invaluable work done for public health by Sir John W. Moore, Dr. Rowlette, and Dr. Alice Barry, who were selected by the Irish medical profession to represent their interests on the Irish Public Health Council.

AT a meeting of the Brighton and Sussex Medico-Chirurgical Society held on February 3rd, Dr. W. LANGDON BROWN, discussing types of glycosuria and their treatment, said that although carbohydrate formed more than 70 per cent. of ordinary diet, it only constituted about 1 per cent. of the body; it was, therefore, the most easily metabolized of the foodstuffs, and disturbed metabolism was apt to show itself particularly in respect of carbohydrate. That true diabetes implied a great deal more than a mere disturbance of carbohydrate metabolism was now recognized; it was a disease characterized by exaggerated katabolism, which shows itself first and most obviously in respect of carbohydrates. He then discussed the various ways in which the body normally dealt with carbohydrates, and pointed out that it attempted to compensate for an impaired power to assimilate them (1) by storing more than usual as fat in the earlier stages, and (2) by raising the "leak point" for sugar, thus diminishing its escape. In some persons the leak point was abnormally low, constituting renal glycosuria, which could usually be recognized by the constant output of sugar, irrespective of diet. Since the sugar in the blood and in the urine did not run parallel, owing to variations in the leak point, it was important to know what was happening in the former. A single observation was not much use; it was far more helpful to give a dose of sugar and watch how the body was able to dispose of it by estimating the blood sugar at regular intervals.

Reviews.

BRAIN INJURIES.

THE book on *Brain Injuries* by Dr. W. SHARPE, of New York,[1] is divided into three parts, of which the first deals with the diagnosis and treatment of brain injuries; the second with what are termed "acute" and "chronic" brain injuries in adults; and the third with brain injuries in children.

The author rightly insists upon the preponderating importance of the cerebral over the cranial injury, but the main theme, developed at great length and with much needless repetition, is concerned with variations of the intracranial pressure. Almost all the symptoms and sequelae of cranial injuries, whether headache, giddiness, mental deterioration, or even traumatic epilepsy, are ascribed to increased intracranial pressure. The author has a great deal to say about cerebral oedema, but, although its pathology is discussed, no new light is thrown upon it.

The main bulk of the book is made up of detailed descriptions of a very large number of individual cases, with comments thereon. Six pages, for example, are devoted to a single case. Such an arrangement makes it difficult to look up any given point, and this difficulty is not lessened by the index, which might be greatly improved.

Two pages are devoted to cerebral concussion, and these are followed by detailed accounts of a number of clinical examples. Little, however, can be learnt as to the author's views with regard to the pathology of this much-discussed clinical state. He speaks of a "temporary disturbance of the theoretical molecular relationship of the cerebral tissues" and of a "probable combination of an immediate circulatory upset with a greater or less degree of shock." He would appear not to regard as suffering from "true" concussion any patient in whom signs or symptoms of any other form of cerebral injury can be ascertained; "the diagnosis should be made only after all other possible conditions have been carefully excluded." The common occurrence of concussion antecedent to or in combination with any other cerebral lesion does not appear to be recognized.

We have looked in vain for any attempt to discriminate between the now generally recognized types of post-traumatic headache. The pathology of these headaches is not discussed, and they all appear to be ascribed to a general increase of intracranial pressure. Traumatic epilepsy is stated to be "the result of a condition which could have been relieved at the time of the primary cranial injury, and thus the epileptiform convulsions could have been avoided." This view could scarcely be shared by the majority of those with any large experience of traumatic epilepsy. Nor would the method of selection of cases for operation, according to whether the increased intracranial pressure (assumed to be always present) was antecedent to or consequent upon the fits, find general acceptance.

The sweeping condemnation of the closure of cranial defects, and the failure to recognize the symptoms due to the existence of such defects, does not harmonize with the experience which has been gained from the study of the large number of cases resulting from the injuries of warfare. It is not a little surprising that in a book published in 1920 the subject of gunshot wounds of the head should occupy less than two pages.

Perhaps the part of the book which is most open to criticism is that which deals with the alleged advantages of the operation of "subtemporal decompression," particularly in relation to cerebral tumour. It is almost impossible to resist the conclusion that the operation is regarded as a kind of panacea for intracranial lesions. The 73 small pictures which illustrate the steps of the operation show little beyond large numbers of instruments and gloved hands in varying relation with one another. The illustrations throughout are, indeed, not on a high level. For example, the picture on page 92 shows the vertical incision for a subtemporal decompression equal in length to the whole of a hand from finger-tips to wrist.

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[1] *Diagnosis and Treatment of Brain Injuries.* By William Sharpe, M.D., Professor of Neurologic Surgery, New York Polyclinic Medical School. Philadelphia and London: J. B. Lippincott Company, 1920. (Med. 8vo. pp. 765; 220 figures, 7 plates. 35s. net.)

Increased intracranial pressure being the keynote of the book and the arbiter of operative treatment, we look for information as to how it is to be gauged. Naturally, the state of the "so-called optic disks" is taken as a guide, and the author rightly draws attention to the fact that within a few hours of an injury the discs often present recognizable changes, the veins being engorged and the edges obscured by oedema. It is not so easy, however, to accept the oft-repeated statement that the intracranial pressure can be accurately measured by means of a mercurial manometer attached to a needle inserted into the spinal theca.

Amongst the results of cerebral injury in children considerable attention is devoted to the treatment of spastic paralysis. The author examined 1,922 children with this condition, and found ophthalmoscopically and by means of the spinal manometer that 368 of them showed definite signs of an increased intracranial pressure; 358 of these patients were operated upon (subtemporal decompression), with a mortality of 10 per cent. "The results have been most gratifying in the younger children . . . not only has there been a lessening of the spasticity of the arms and legs . . . but there has been a definite amelioration in the mental condition." "Even in the older extreme cases the improvement has been most striking."

A GENERAL VIEW OF PREVENTIVE MEDICINE.

THE avowed aim of the authors of the *Principles of Preventive Medicine*[2] is "to give an outline of the principles and practice of preventive medicine so far as it seems to concern the medical student and the general practitioner of medicine"; they have succeeded in producing a volume of considerable merit and attractiveness. It cannot be described in any way as a textbook, and certainly will not displace the standard textbooks on hygiene which are read at the present time by candidates for a diploma in public health. It contains much of value to the general practitioner and also to that increasing number of lay persons who are interesting themselves in public health matters. They will learn not only what preventive medicine in the widest sense means, but they will discover what preventive agencies are already in being, how their activities are being carried on, and how the official workers may profitably be assisted by the unofficial.

The general arrangement of the book is excellent. Beginning with a chapter upon the English system of local government, there follow in appropriate chronological succession chapters dealing with eugenics and maternity, infant mortality, the welfare of the child from one to five years—the toddler, the health of the school child, and the health of the adolescent and adult. Later chapters deal with housing, food supplies, water supplies, infectious diseases, preventive inoculation and industrial hygiene. More than forty pages are given to a chapter upon vital statistics in which the elementary principles are very clearly put, and the reader is gradually introduced to more complex phases of the science. In the preparation of this chapter the authors acknowledge the assistance rendered them by Dr. Major Greenwood. The chapter upon preventive inoculation describes with great clearness and simplicity the theory of immunity, and deals with the various methods for the production of artificial immunity. When discussing the subject of alcoholism, the authors express temperate opinions. The solution of the alcohol question, they consider, lies partly in the control of the liquor traffic, partly in the provision of counter-attractions to the public-house, and partly in the education of the people. They add, however, that the question will never be completely solved until overcrowding and slum areas are abolished.

The views of the authors on certain questions are expressed dogmatically and will not find universal acceptance. We need quote two instances only. An ideal system, they say, by which a vast number of unhappy marriages and diseased children might be prevented would be to require the contracting parties to obtain a certificate of health before matrimony. In the opinion of many of those who have given this question serious attention such a course would merely have the effect of increasing the number of irregular unions. The second instance is in the chapter upon housing, in which is discussed at some length the present-day problem of providing adequate housing accommodation at a rental which the working man will be able to pay. Except in the case of really bad tenants, the authors consider that the provision of wooden houses will solve to a great extent the present and pressing problems of housing. We should be glad if this optimism could be justified. The greater part of the book shows much care in preparation, but here and there are indications of hurried compilation. This is especially the case in the chapter on local government, in which the county council is spoken of as the local authority which has cast upon it the duty of preventing and abating all sorts of nuisances and insanitary conditions and as being responsible for the prevention of disease. We need hardly say that it is the district council and not the county council upon whom this duty falls. Other instances might be given, but we are sure that the slips will be rectified when a further edition is published, as we feel confident will be the case.

[2] *The Principles of Preventive Medicine.* By R. Tanner Hewlett, M.D., F.R.C.P., D.P.H., and A. T. Nankivell, M.D., D.P.H. London: J. and A. Churchill. 1920. (Demy 8vo, pp. 544; 5 diagrams. 21s. net.)

X RAYS IN GENERAL PRACTICE.

General Practice and X Rays, a book written by Dr. ALICE KNOX,[3] is intended to be a handbook for the general practitioner and the student. It is divided into two parts: the first, dealing solely with the uses of *x* rays in diagnosis, will be of use to the busy doctor, since it indicates plainly both by text and illustrations the various conditions in which an *x*-ray examination is indicated, and in what directions it can be of assistance in any particular case. The author shows very clearly that the radiologist is no mere picture taker, but that in his dealings with another practitioner he is a consultant; as it is important that he should be able correctly to interpret the radiological findings he should be treated by the practitioner in exactly the same manner as other consultants, which essentially means that he should be made acquainted with the history of the case and the existing physical condition of the patient.

The first chapter deals somewhat generally with the sphere of usefulness of *x* rays in general practice, and discusses amongst other things the preparation of the patient for various examinations, the interpretation of plates, and the dangers attendant on an *x*-ray examination. The second chapter goes into more detail, and serves to indicate what may be expected in diseases of the chest, alimentary tract, the urinary system, the pelvis, and in injuries and diseases of the joints. The third and fourth chapters, which complete this section, are on the diagnosis and treatment of injuries and diseases in children, and on *x*-ray treatment generally.

Part II, by Dr. Robert Knox, is a short but clearly written description of the production of *x* rays and of instrumentation. It is quite elementary, but should give anyone who knows nothing about the subject a very good idea of the instruments used by radiologists, and the manner in which *x* rays are produced and applied.

This book has a distinct purpose: written in plain and simple language, and well illustrated with numerous diagrams and radiographs, it should appeal to all busy general practitioners to whom the usual scientific textbook and the textbooks for experts are altogether too full of detail. The author can be congratulated on having produced for the profession generally a small, well written, and admirably illustrated book which deals lucidly with all the more important points in radiography and radiotherapy, and which can be easily assimilated by the non-expert. It is a book which every general practitioner who has no special knowledge of *x* rays will find of the greatest use to him in the practice of his profession.

[3] *General Practice and X Rays.* A Handbook for the General Practitioner and Student. By Alice Vance Knox, M.B., B.Ch. 1921. London: A. and C. Black, Ltd. (Crown 8vo, pp. 228; 32 plates, 56 figs. 15s. net.)

WOMEN AS ARMY SURGEONS.

UNDER the title *Women as Army Surgeons*[4] Dr. FLORA MURRAY has written the history of one of the organizations established by medical women during the war. She relates the history of the Women's Hospital Corps in

[4] *Women as Army Surgeons.* By Flora Murray, C.B.E., M.D., D.P.H. London: Hodder and Stoughton. 1920. (Pp. 263; 23 illustrations. 12s. 6d.)

Paris, Wimereux, and Endell Street, from September, 1914, to October, 1919. The record is divided into two parts, dealing respectively with the work in France from September 14th, 1914, to February 17th, 1915, and the long period of more than four years' activity at Endell Street. Early in August, 1914, Dr. Flora Murray, Dr. Louisa Garrett Anderson, and some of their friends, being determined that medical women anxious to give their services to the nation should not be excluded from military work and from the great attendant professional opportunities, energetically collected funds and organized a hospital unit which was established under the French Red Cross in the Hôtel Claridge, Paris, by the middle of September. With Dr. Flora Murray as the Administrator or *médecin-en-chef* and Dr. L. Garrett Anderson as surgeon-in-chief there was little delay in adapting this recently built hotel into a well organized hospital. The story of their experiences, and incidentally of their convincing all and sundry (including both their French hosts and inspecting officers from the R.A.M.C.) that women surgeons could make good, is told with humour and not entirely without digs at the mere men who were "unconverted to women doctors." The foreign language naturally presented some difficulties; left alone on duty a surgeon directed a nurse with the reputation as a linguist to find out if a French officer, shot through the body, had any abdominal pain, the prompt question, "Avez-vous du pain dans l'estomac?" elicited an indignant reply that he had taken nothing but the fluid diet prescribed.

In November an additional hospital at Wimereux was organized with the same high courage and spirit, but early in 1915 Sir Alfred Keogh complimented the Women's Hospital Corps on their work and transferred their activities to London and to the charge of a hospital of over 500 beds. The old workhouse of St. Giles, Bloomsbury, at the upper end of Endell Street, was renovated and transformed into a hospital and the staff got together. Miss Elizabeth Robins and Miss Beatrice Harraden joined as librarians, and the latter contributes the preface to the volume, in which there is a sincere appreciation of Dr. Flora Murray, followed by the comment:

"It is not to be wondered at that the success of this military hospital, officered, staffed and run entirely by women, became a source of immense satisfaction and pride to all women, but more especially to those who had taken an active part in the struggle for the Suffrage, and had shared with Dr. Flora Murray and Dr. Garrett Anderson the ups and downs, the hopes and fears, the disappointments, disillusionments, and encouragements, and all the stress and strain of a long-drawn-out political campaign."

The chapter entitled "The position of women under the War Office," contains the story of the unsuccessful struggle to obtain for women doctors serving with H.M. Forces the same rank as men in a similar position.

NOTES ON BOOKS.

THE *Minutes of the General Medical Council*,[5] and of its Committees and Branch Councils for 1920, have been issued. The proceedings of the Council have been reported from time to time in our columns. The bulk of the volume is occupied by the Minutes of the Executive Committee, which fill 121 pages, and by appendices filling 173 pages, the latter being chiefly reports presented by the various committees; the minutes of the Branch Councils occupy 17 pages. The *General Index to the Minutes*[6] has been brought up to date, and includes Vols. xl to lvii inclusive 1903–1920).

The Early Embryology of the Chick, by B. M. PATTEN,[7] is designed to assist those who are beginning the study of vertebrate embryology. The author's aim is to describe in a clear and simple form the course of development from fertilization until the end of the fourth day of incubation, so that the student may master the facts easily for himself and so "conserve the time of the instructor for interpretation of the broader principles of embryology." In his account of the early development from fertilization until the time of laying, the author has deliberately avoided controversy, and has given a straightforward, but necessarily somewhat artificial, account of the processes as they are at present known to occur. The comparison of the gastrulation of the bird with that of the Anamnia will carry conviction only to those who do not realize that the diagrams are the only evidence that is put forward. The author has sacrificed too much for the sake of a clear account. He is asking the student to found his beliefs on something other than actual observation. To the rest of the work great praise is due. The accounts of the various processes of development are clearly explained. The figures are good (there are 182 of them) and the method of direct labelling undoubtedly makes them easy for the student to follow in reading the book. It is like having Duval's Atlas with a clear account of the various stages written alongside. No directions for practical work are given, a wise omission, as they would have increased the size of the work without increasing its value. There is an excellent select bibliography at the end of the book.

[5] London: Constable and Co. 12s.
[6] London: Constable and Co. 7s. 6d.
[7] *The Early Embryology of the Chick*. By B. M. Patten. Philadelphia: P. Blakiston's Son and Co. 1920. (Roy. 8vo, pp. 167; 55 illustrations.)

BRITISH CHEMICAL INDUSTRIES.

ON February 19th a number of British firms engaged in the production of fine chemicals issued a circular letter pointing out the national importance of the industry, and stating that in the years following 1914 they had, at the urgent appeal of the State, extended their research and manufacturing plant in order to secure those essential products of science without which victory could not be attained. The letter went on to state that this key industry is now in danger, owing to the flood of imports from abroad, which the present condition of the exchanges, among other circumstances, makes possible.

We have since received from a number of old-established British firms more particularly concerned with the production of drugs an appeal to medical men of the British Empire to support British industry. The signatories disclaim any political object, desiring merely to lay the following facts before the profession:

"(1) In all fairness, it should be realized that international trading is not on a reciprocal basis, that is to say, foreign chemicals and pharmaceutical preparations are admitted into this country, practically speaking, duty-free, whilst goods exported from this country to countries abroad are subject to an exceedingly high *ad valorem* duty. One vast country we have in mind directly prohibits the import of pharmaceutical preparations of other countries, while other immense states do so indirectly by means of the high duty already referred to.

"(2) It should be remembered that although much has been done during the war and since in the direction of promulgating British chemical industry, a great amount of work has yet to be done to consolidate the fine chemical and allied industries at home, and an obvious point is that the factories in Germany are for the most part absolutely intact, and she retains secrets which are the outcome of laborious, painstaking investigation.

"(3) We desire respectfully to impress on your readers that we do not advertise to the public, nor 'prescribe,' nor in any way trespass on the rightful province of the medical practitioner; on the contrary, we rely on the position that the chemist, so far as the medical use of chemicals is concerned, is the handmaid of the medical man, and we might add, rather bluntly, we do not recommend foreign medical men and health resorts. Why should the medical man recommend foreign pharmaceutical preparations?

"(4) The scientific staffs in our laboratories welcome suggestions from medical men, and will carry out investigations to elucidate problems connected with chemistry, materia medica and the like, which may prove of assistance in the art of healing.

"(5) We have in our employment men who have been through the hell of the recent war. We have also with us young pupils and apprentices who have never even heard the name of Lister, and who know nothing of his teaching until we have taught them what he did for suffering humanity. These two types of men, in our opinion, need every support, encouragement and protection which the medical man can give."

The appeal ends as follows:

"We ask the doctor to demand British produce, and furthermore convince himself that what is stated to be British is British, and by so doing enable us to give employment to more and yet more British workmen, and to compete with foreign enterprise on the unequal footing above mentioned."

THE title of the Spanish periodical *Revista de Medicina y Cirugia Prácticas* has been changed to *Archivos de Medicina Cirugia y Especialidades*.

DR. ALEXANDER FRAENKEL has resigned the editorship of the *Wiener klinische Wochenschrift*, which he has held for twenty-five years.

AN institute of medical bibliography has been established at Naples. Its organ is to be a monthly journal entitled *Rivista della stampa medica*.

THE EPIDEMIOLOGY OF INFLUENZA.

WITH the exception of a chapter on the clinical aspects, to which reference is made elsewhere, the first part of the Ministry of Health's Report on the Pandemic of Influenza[1] is devoted to the epidemiological study of influenza. The modern history of the disease is first recounted, then the statistics of 1918–19 are examined, next the clinical and the bacteriological features are described. In the four following chapters particular problems—namely, the extent of protection conferred by previous attack, the relation between meteorological variations and epidemic influenza, the epidemiological significance of domestic overcrowding, and the special prophylaxis of the disease—are considered. In the last chapter an attempt is made to summarize the lessons to be learned.

HISTORY.

The historical chapter does not profess to be exhaustive, but examines in some detail the sequence of events from the time of Sydenham. The writers point out the difficulty, amounting to impossibility, of providing a logically complete definition of "influenza," but remark that "if into the definition of influenza, while maintaining the characteristics of *apparent* suddenness, undoubted rapidity of evolution, and usually low fatality, we import the conception of peculiar attendant circumstances, such, for instance, as a break in the uniformity of epidemiological history prior to the outburst, and also keep in mind the catarrhal element of the explosive disease as a frequent clinical experience, we shall reach a plan of identification which is not logically assailable." Following this clue, it is shown that both in the experience of Sydenham and in that of his greatest successor as a medical analyst, Huxham, epidemic influenzas were dramatic incidents occurring in series of years characterized by less striking but yet distinct abnormalities of the public health.

"We think," say the compilers, "Huxham's narrative establishes the proposition that the epidemiological features of the cycle of years within which influenza exploded once or more were, *apart from such explosion*, different from the characteristics of the influenza-free epochs. Huxham's crowded references to intermittents around the explosive manifestation of influenza in 1743, his silence between 1745 and 1752, the paucity of his remarks on the subject during the quiet years 1739–42, are paralleled in the story told by Sydenham. We are also justified in making a comparison between the strange nervous fevers incidental to Huxham's narrative and Sydenham's new fever of 1685. With these long-sustained chronologies by skilful observers to guide us, it is not fantastic to suppose that the inter-relation of 'agues' and influenzas to which Dr. Creighton called attention in the section of his history dealing with the sixteenth and seventeenth centuries, is more than casual and not a mere reflection of some theoretical pathology."

It is shown that similar but less complete evidence exists respecting the influenzas of 1762 and 1782, but that no adequate chronologies of the pandemics of 1803 and of 1831–37 have survived. Both for 1847 and for 1918, there is evidence of an abnormal condition of the public health apart from influenza, but the same remark hardly applies to the years which ushered in the great epidemics of the last ten years of the nineteenth century. Still, even for this latter period—which, as the authors candidly emphasize, constitutes the most formidable objection to the view that influenza is not an isolated event but an incident in a series of related events—prior to the supposed importation of influenza very remarkable localized outbreaks of disease had occurred, such as that at Northallerton in 1887 and the fatal epidemic of pneumonia in Middlesbrough more than a year before the pandemic. The general conclusions drawn by the compilers are in essential agreement with those reached by Dr. Hamer and by Dr. Crookshank; they doubt whether the ravages of influenza can be stayed by the discovery and destruction of some remote endemic focus of the disease, and hold that

"The problem of epidemic influenza is largely an internal problem of each nation; there is no question of shutting the wolf out of the sheepfold, he has been regularly lying down with the lamb for years; his ravages depend as much upon the disposition of the sheep within the fold as upon his appetite. Thus broadly stated, the hypothesis neglects some portion of the truth; however combustible the material, there can be no fire without a spark, and when the fire has been started it may spread to material not naturally combustible. We must not ignore this consideration, but it has perhaps been over-emphasized in current discussion."

[1] H.M. Stationery Office. (10s. net.)

RECENT STATISTICS.

In the following chapter the general statistics of 1918–19 are examined. It is pointed out that: "(1) The mortality in England and Wales, as a whole, attributable directly or indirectly to influenza, is without any precedent in magnitude; (2) that that of the metropolis affords no parallel more recent than 1847; (3) that the toll taken at the young adult ages of life is without *any* known West European or North American precedent." The relation between the death rates from influenza in the three waves and the normal pre-epidemic standardized rates (all causes) of the county and metropolitan boroughs is studied by the method of correlation. It is shown that the death rates in the first wave were substantially correlated with the normal death rates, a finding comparable with that of Professor Raymond Pearl of Baltimore, who showed that in America "an essential factor in determining the degree of explosiveness of the outbreak of epidemic influenza in a particular city were the normal mortality conditions prevailing in that city"; but, for reasons explained in the report, the compilers do not regard their arithmetical results as deserving of much confidence, and suspect that the heterogeneity of the data has influenced the numerical magnitudes of the correlations. The writers devote attention to the form of the epidemic wave in time. They remark that the data of epidemics on ships, carefully compiled by the health authorities of the Commonwealth of Australia, are particularly instructive, that the forms of these curves are complex, almost suggesting in each a triple wave reproducing in miniature the world evolution of the pandemic.

"On the ship we do really have ordinary social life in isolation from the great world, a real microcosm. The remarkable point is that within this microcosm we have seen in miniature a triple wave, such as the whole world experienced, but running through its phases in weeks instead of months. But this evolution was not parallel with the world evolution, since the voyage started after the first act of the world drama. Whatever organism was 'carried,' it must have belonged to the autumn variety, not to the summer vintage. Hence, if this threefold wave phenomenon is not a mere illusion, it would seem to be a function of the organism as modified by passage, a modification determined by the environmental conditions."

BACTERIOLOGY.

The chapter on bacteriology, by Sir Frederick Andrewes, is worthy of its author's reputation. At the outset Sir Frederick warns the reader that "the germ theory of disease is now so firmly established that we are in danger of too readily accepting a microbe as the causal agent of a disease, and of neglecting the rigid proofs which should be demanded." He points out that from the experience gained between 1890 and 1918, "it cannot be said that the status of Pfeiffer's bacillus as the cause of epidemic influenza had materially altered. No further confirmation had been obtained, nor had the observed facts disproved a possible relationship." The results in 1918 did not suffice to settle the question. The failures to recover Pfeiffer's bacillus in the summer could not, in Sir Frederick's opinion, be referred to a faulty choice of medium or defective technique.

"Amongst those who have recorded their failure to find the organism are bacteriologists of the highest repute: the failures were perhaps more numerous in Germany than elsewhere: such men as Kolle, Gruber, Friedemann, and many others, failed to find it, while Uhlenhuth and Pfeiffer himself were puzzled at their want of regularity in finding it. It is expressly stated by Sobernheim that, using precisely the same technique, he uniformly failed to find it in the summer epidemic and almost uniformly succeeded in October." "The evidence," says Sir Frederick, "does not carry conviction as to the primary causal relationship of Pfeiffer's bacillus to epidemic influenza. The varying results cannot be correlated with the competence of the observers. The observed facts, notably the earlier negative findings in certain localities, and the more general positive results in the autumn outbreak, would be better explained on the assumption that the bacillus played a very important secondary rôle in the disease, and was not the primary infecting agent." Decisive significance cannot be assigned to the results of agglutination or complement fixation tests because Pfeiffer's organism is at least so commonly present as a definitely pathogenic invader "that it would be strange indeed if antibodies were not formed against it."

Important evidence might be furnished by unequivocally successful results of prophylactic immunization by vaccines containing Pfeiffer's bacillus. Sir Frederick Andrewes calls attention to the apparently striking results of large scale inoculations, but notes the desirability of

statistical criticism. This point is in fact taken up elsewhere in the report, where it is remarked that "no inferences can be drawn from a lower attack rate upon inoculated than upon uninoculated persons if the inoculations were carried out during the epidemic, without due allowance for variations of length of exposure." This simple consideration rules out most of the published data. For the rest, the compilers say:

"Such evidence as we have in favour of any practical advantage points to the efficacy of vaccines derived from organisms cultivated from cases existing in the neighbourhood of the tested population. This is illustrated by the example quoted in the section on influenza in the annual report of the Chief Medical Officer. A pure Pfeiffer vaccine was used for the inoculation of employees (volunteers) in a London business house, and the inoculated escaped the disease, while their co-workers experienced a normal incidence. It appears doubtful whether any simple stock vaccine derived from a limited number of strains of micro-organisms implicated in the clinical evolution of influenza is likely to be of value."

It cannot be said that the evidence derived from prophylactic inoculation much strengthens the case against Pfeiffer's organism as the primary pathogenic agent.

Sir Frederick Andrewes thinks that the evidence in favour of a filter-passing organism as the essential cause is suggestive but unconvincing.

"The strength of the case argued by Gibson and his colleagues lies in the fact that there was a definite incubation period in their experiments, that they succeeded in carrying on the effects through more than one generation of animals, and that they produced them with cultures. The weakness lies in the fact that the lesions in their animals do not afford convincing proof of influenza. . . . The cultivation of filter-passing organisms is notoriously a difficult thing, and beset with many fallacies, as Arkwright has well pointed out in his recent criticism of the subject. The results so far recorded in influenza must be received with caution."

Whether or not a primary significance can be assigned to Pfeiffer's bacillus, Sir Frederick believes "there can be no doubt that it played a part of vast importance in the recent epidemic of influenza. Though we know it, at normal times, as a mere agent of catarrh, the more virulent types which prevail in epidemic times are more highly toxic, and seem especially to lead to escape of blood from the smaller vessels in the lungs and bronchi. It seems probable that we must regard Pfeiffer's bacillus as the chief cause of the haemorrhagic oedema and the localized haemorrhagic areas in the lungs which have been so conspicuous a feature of the late epidemic." Next in importance come certain types of streptococci; *Streptococcus haemolyticus* has been often found in the pulmonary lesions, and its presence there has "been a distinguishing feature of the epidemic, especially in the autumn, when the disease exhibited its highest fatality, and it was found in the worst cases."

Is Immunity Conferred by a Previous Attack?

In the next chapter the compilers discuss the question whether those who had been attacked by influenza in one phase of the pandemic were, on that account, less liable to attack in a subsequent outbreak. This matter is examined in detail and perhaps constitutes the most original section of the report. Briefly, the method adopted was this. The histories of considerable samples of different populations were followed through all the phases of the epidemic, and it was determined whether the attack rates in, say, the autumn were significantly different (from the statistical point of view) upon those who had and those who had not been attacked in the summer. It was found that the after-histories of the exposed to risk were very different in different places. In some cases—for instance, in Leicester—those attacked in the summer came off far better in the autumn than those who had not been attacked in the summer; in other cases—for instance, in Manchester—the summer victims experienced an identical rate with that suffered by those not attacked in the summer. The possible reasons for these differences are discussed in detail, and the conclusion is reached that the immunizing value of the strains of organisms probably differed in different parts of the country. The method of analysis is subject to a theoretical criticism. Thus it is assumed that if the attack rates in the autumn upon those who were and were not attacked in the summer are the same, then the summer attack conferred no protection. But if those singled out for attack by the disease in the summer were so singled out because their resisting power was low, then, *caeteris paribus*, they should again have a higher attack rate in the autumn; if they have only an equal attack rate, the summer experience helped them. But it may be urged in reply that there is little or no evidence that the first phase of the pandemic did select those who, judged by any extrinsic criterion, were peculiarly liable to respiratory attacks. In any event, the practical result that whatever protection was conferred was far from being absolute, is plain. Upon the whole, there is a balance of probability that the summer influenza had some immunizing value; less reason can be shown for thinking that autumn attacks shielded their victims in the third phase.

The Weather.

The following chapter deals with the weather and disease. This chapter contains an interesting summary of traditional opinions and brings out the relation between changes of temperature and variations of mortality from respiratory disease. It also shows that before each of the three waves of influenza warmth was deficient, but, as might have been expected, the compilers hold that whatever part was played by meteorological factors in the genesis of the pandemic must have been quite a minor one.

Overcrowding.

In the next chapter the relation between domestic overcrowding and the incidence of influenza is studied; no close statistical relation was found and the tentative conclusion is reached

"that the natural infectivity of the germ may be so high that the necessary exposures and contacts of *all* persons living under urban conditions are sufficiently numerous to provide opportunities of transfer so effective that any increase above the average is relatively a factor of negligible order."

It is, however, specifically stated that these conclusions apply solely to incidence, not to fatality, it being probable that the fatality amongst patients grossly overcrowded (as, for instance, upon war transports) was far above the average.

Chapter IX deals with general prophylaxis. The compilers remark that

"from what has been said in this report it follows that to avoid crowds, to shield the mouth and nose when coughing or sneezing, not wantonly to thrust one's face into the face of one's interlocutor, are essentially rational and appropriate methods of reducing the risk to take influenza. It even appears probable that the one form of overcrowding which in some little measure *can* be controlled by the individual is the form most potent to spread the disease. In the present state of the nation, to advise the avoidance of overcrowded tenements and lodgings is indeed a counsel of perfection; it is likewise a vain quest to seek for public conveyances not grossly overcrowded; but it is quite easy not to frequent theatres, music halls, and picture houses; it is even possible to avoid bargain sales, political meetings, and assemblies. These forms of congestion belong to the extra-domestic group which, by a process of exclusion, we have discovered to be more influential than intradomestic conditions admittedly hard to control now."

Much importance is attached to the hygiene of the nasopharynx, and attention is directed to the researches of Dr. Leonard Hill (described in his reports to the Medical Research Council, and also in our columns). Due weight is given to the importance of further research into the immediate etiology of the disease, but "the public should not suppose either that nothing of service can be attempted until the authentic *materies morbi* of influenza has been unequivocally defined or that the recognition and successful isolation of the authentic microbe would necessarily be followed by elimination of the influenza scourge."

Summary and Final Hypothesis.

The last chapter of this part is a general summary of those we have discussed, and a provisional statement of a hypothesis which covers the facts. This hypothesis is that there have been three phases in the development of influenza.

"The first, which lasted for many centuries, was, if we may be permitted to use teleological language, a series of attempts to maintain a high level of infectivity or dispersiveness, which attempts were unsuccessful. The second phase, ushered in by the year 1889, is marked by a partial victory of the germ, a fairly constant infective power has been secured, and much infection is produced throughout the world at frequent intervals, but the toxicity relative to the infectivity is still slight. The final phase is of complete victory; infective power is maintained, even enhanced, and to this is added a toxicity surpassed

by few epidemiological competitors. Viewed as a contest between man and 'germ,' it would seem that in the congestion of public transport and the multiplication of public assemblies and entertainments, features which increasingly characterize the development of the European type of civilization, a strategical advantage was given to the enemy. Finally, in the provision of countless incubators, whether in garrisons, war-time factories, or abnormally overcrowded and ill-ventilated means of transport and places of entertainment, the opportunity was afforded for the development of destructive powers which secured to the enemy a decisive and overwhelming victory."

These reflections suggest that there are dangers ahead.

"The dangers to the world from epidemic sickness in this matter of influenza are enhanced in two ways. The inevitable trend of the movement of population will keep the infectivity of the organism at a high level. This we may face with equanimity. But if anywhere in the world there be large collections of men, whether through war or economic strife, or through that dissolution of society which a certain degree of collective misery and disorganization entails, herded together *en masse*, there will be opportunities for the other modification of the *materies morbi*, which renders it apt to conquer the world. No sanitary cordon, no quarantine, will shield us from this danger. The porters of the infection may not be sick; to exclude even the sick has often been found a task beyond the power of a quarantine authority; land quarantine has, in fact, never yet succeeded. To realize that the material well-being of the inhabitants of a foreign—perhaps even a hostile—country is a pressing concern of ours is very hard. Yet the teaching of this pandemic is that it is a hard truth. Any supra-national organization for the control of epidemics will need to face it. The popular belief that misery breeds disease is strictly true, and the influenza of 1918–19 is no exception to the rule. The history of the world has never yet provided an instance of a mortal and highly dispersive illness among the antecedents of which human misery did not assume a prominent place."

In his introduction to the volume Sir George Newman emphasizes one aspect of this doctrine—namely, that, as he puts it,

"The fundamental requirement to make us masters of our fate is a universal improvement in the standard of health and the conditions of life. No technical device, no narrow or specific remedy for pestilence, can ultimately, triumph apart from a sanitary environment for the community and the sound nutrition of the individual. They are the bed-rock. Out of them spring the sources of national vitality. Hardly less certain is it that we require, and must seek till we find, more knowledge. We have in substantial degree the means of controlling tuberculosis and syphilis, malaria and plague; we fail to control these four pestilences largely because we do not use the means; and education is perhaps the answer to that. But in the case of influenza and its allies we are not yet in possession of the means, and whilst we press forward with the improvement of sanitation, of nutrition, and of the conditions of life, we must apply ourselves anew to search and research into the causes of primary and secondary infections, into epidemic catarrh, and the common cold, into carriers, and into immunity. That is perhaps the principal lesson which is taught us by our experience of the great pandemic."

With this quotation from the preface by the Chief Medical Officer we shall conclude our notice of the report. The second part, compiled by Dr. Bruce Low, C.B., and Dr. S. P. James, which compresses within less than 200 pages a vast amount of statistical and other information respecting influenza abroad, does not lend itself to summarization, but is not the less worthy of perusal. The same remark applies to the valuable collection of scientific papers by medical officers of health, as well as by officers of the Ministry, which form appendices to the report.

We believe that Sir George Newman was justified in characterizing this report as a "contribution of exceptional interest and suggestiveness," and that its authors, both the medical members of the Ministry's staff and the other medical men, not civil servants, who have collaborated, deserve the thanks of their colleagues. A volume of 577 pages which announces no sensational discovery and promises no conquest of influenza in the near future cannot render its authors popular heroes. They will, however, be sufficiently rewarded if the outcome of their labours is of use to other students of a menacing yet fascinating problem.

THE Hispano-Portugese Association for the Advancement of Science will meet at Oporto in June.

A SCIENTIFIC expedition to Central Asia, under the direction of Dr. Roy C. Andrews, has been organized in the United States by the American Museum of National History to carry out researches in anthropology, archaeology, zoology, and medical geography in the less explored regions of Turkestan, Tibet, and Mongolia.

UNIVERSITY GRANTS.

THE University Grants Committee appointed in July, 1919, to inquire into the financial needs of university education in the United Kingdom, and to advise the Government as to the application of any grants that may be made by Parliament towards meeting them, has made a report,[1] after giving full consideration to all the representations made to it, and after carrying out a series of visitations to all the universities and colleges in England, Scotland and Wales. The parliamentary grant is now £1,000,000 a year; in 1919–20 a special grant of £500,000 in addition was made, and in 1920–21 the unexpended balance of this, amounting to £196,000, was available. During the past year nearly the whole of this unexpended balance has been distributed. The Chancellor of the Exchequer has promised that the annual vote this year shall be increased to £1,500,000.

The medical member of the University Grants Committee is Sir Wilmot Herringham, who succeeded the late Sir William Osler in November, 1919.

The Committee begins by expressing its sense of the efficiency maintained in the universities and colleges generally in face of many and serious difficulties, but is convinced that the present resources of the universities are inadequate, in spite of the facts that since the armistice the Treasury grants have been increased by 83 per cent., that tuition fees have been increased, that a few local education authorities have increased their support, and that many of the universities are endeavouring also to supplement their revenues by public appeals. On the other hand, it is pointed out that all expenditure, in particular unavoidable expenditure on wages and material, has grown enormously, and that even if the pre-war income were doubled, it is doubtful whether the universities would be as well off as they were before the war.

The report goes on to point out that the number of students since the armistice has been unprecedented; the total number of full-time students in attendance at grant-aided institutions and colleges rose from 23,872 in the academic session 1913–14 to 36,423 in 1919–20, and the number was raised to 37,748 by the addition of certain colleges to the list. Of this total 11,682 were ex-service students, but it is pointed out that a permanent increase over 1913–14 is to be expected, owing to the larger number of secondary schools and to the operation of the Education Act, 1918.

An important part of the present financial embarrassments of the universities and colleges arises out of the need for increased salaries and improved superannuation. The Committee agrees that the present salaries of many university teachers are inadequate, and has evidence that many members of the university staffs are living in circumstances incompatible with continued efficiency; many teachers are not in a position to enjoy the advantages essential to the proper discharge of their duties, such as books, travel and membership of learned societies. Further, many are compelled to supplement their income by dissipating their energies in outside work. The Committee does not commend the scheme of salaries and increases proposed by the Association of University Teachers; it agrees that it would be an advantage if all the grant-aided institutions agreed upon minimum salaries, but does not agree to a dead level of uniformity as between institutions. The Committee also agrees that it is important to establish an equitable system of superannuation. The Federated Superannuation System for the Universities in England, established in 1912, provided that 5 per cent. should be paid by the institution and 5 per cent. by the beneficiary. The contribution of the institution has now been increased to 10 per cent. The youth of the scheme renders it desirable to make special provision for many of the senior teachers. The position in Scotland is special, and is, the Committee thinks, unsatisfactory.

An important section of the report deals with equipment and accommodation, and it is declared that the character and efficiency of a university may be gauged by its treatment of its central organ—the library—which is essential to the well-being alike of the arts and science. Ampler funds are needed and the status of the librarian should be improved. For the subjects included in the faculty of pure science additional staff and improved accommodation and equipment are required. In the

[1] Cd. 1163. H.M. Stationery Office. Price 3d. net.

majority of the institutions visited extensions of the chemistry or physics laboratories are either contemplated or in progress, and the needs of the departments of geology, botany and zoology are realized to be hardly less acute.

In dealing with the applied subjects it is admitted that it is not possible to draw a hard and fast line between pure theory and practical application, and in vocational training it is essential to maintain that breadth and proportion of view which are implied by a university standpoint. The bases on which applied science is founded are ever broadening, and as an illustration of the doctrine that university courses must tend to become increasingly exacting if they are to be continually informed with fundamental principles, the following remarks are made about the Faculty of Medicine:

Medicine.

"The Faculty of Medicine is, perhaps, the best example of the combination of the theoretical and practical, the liberal and the vocational, to which we have just referred, and the thorough grounding which it requires in the basic sciences, physics, chemistry and biology, and in the intermediate, anatomy and physiology, illustrates what we believe to be an essential condition of a university education in any applied science.

"It is held by some that the basic sciences should be studied at school before registration, and we are so far in accord with this view that we think that no education can be called liberal which leaves a student at eighteen ignorant of the fundamental laws of Nature upon which rest also the processes of the arts. But there are at present too few secondary schools in which these subjects are properly taught to allow the universities to dispense with suitable courses for medical students, and also there are special parts of them which are necessary for their application in anatomy and physiology, but are not included in the usual school courses anywhere. The universities, therefore, have not only been compelled to continue to teach these sciences to students of medicine, but have in the last twenty-five years greatly extended and improved the teaching that they provide. Almost within the same time pathology, which in former years was largely confined to morbid anatomy, has expanded so far as to include the vast fields of bacteriology with immunity, and of morbid metabolism, or chemical pathology. It even seems probable that pathology will soon require a physical department, for certain pathological conditions are connected with changes in the blood and other tissues which are essentially physical in character and need physical methods for their evaluation. The whole group of these sciences has passed or is passing into the hands of teachers who devote themselves entirely to the work, and each subject is taught in laboratories which occupy a large amount of space, and are extremely expensive to equip and to maintain.

"The Royal Commission on University Education in London reported in 1913 that the teaching of the final medical subjects in England, though in its practical training of students probably the best in the world, was in some ways deficient in the scientific aspects of the subject. They remarked, and it is generally allowed, that to obtain the best teaching it is essential that the clinical teacher should be himself engaged in the discovery of fresh truths, and should be at the growing point of knowledge. So far as clinical methods can reach, English teachers have no cause to reproach themselves on this score. Accurate observation, which is the foundation of all discovery, has been practised and taught by clinicians in England as thoroughly as anywhere in the world, and up to the present day England has in this field been fully abreast of other nations. But since the middle of the last century, experiment, on the necessity of which Harvey himself insisted, has been applied to medical problems with such increasing vigour and success that the laboratories have become almost as important as the wards. On this side England has been wanting. There has been much brilliant experiment, and much discovery, for instance in diseases of the nervous system, and in metabolism, and in the application of bacteriology, but it has been the work of private individuals who for lack of means have not been sufficiently helped, and often have not even been encouraged, by the schools. It has not been considered a necessary qualification for teaching medicine that a man should have practised this method of advancing it.

"The Royal Commission recommended that to remedy this defect a professorial system should be set up which would provide teachers and an assistant staff willing and able to devote themselves to scientific investigation. At the instigation, and with the assistance of the Board of Education, whom we have succeeded in the task, this system has been put into operation in certain medical schools in London under the name of "Clinical Units." At such schools directors have been appointed who, entirely or almost entirely resigning private practice, give themselves up to hospital work, treatment of patients, the teaching of students, and the clinical and experimental study of disease. An adequate staff and laboratories have been or are in process of being supplied. Medical and surgical units have now been established, with the assistance of grant-aid from the Treasury, at the medical schools attached to St. Bartholomew's Hospital, the London Hospital, University College Hospital, and St. Thomas's Hospital. At Edinburgh and Sheffield new professorships have been created on a similar basis, and our tour of inspection has shown us that everywhere throughout England and Scotland the principle has been seized, the need realized, and, where circumstances did not admit of such new appointments, great efforts were being made by the present staff to render the teaching more ample and more vivid. The Committee have issued a statement for the guidance of the university bodies contemplating the establishment of new arrangements to this end."

The report contains many references to the importance of maintaining the self-governing powers of the universities. In a concluding paragraph the relation of this principle to finance is brought out. The official grant-in-aid provided since the armistice and the further increase promised or contemplated by the Chancellor of the Exchequer prove that the Government and Parliament are not unmindful of their responsibilities, and the expectation is expressed that the claim of higher education upon private generosity will be similarly appreciated. The Committee goes on to emphasize Mr. Chamberlain's reference to local support as a principal factor in future grant allocations, and urges university authorities to regard their endowment funds as the central source of their revenue, "for it is in our view indisputable that only by the consolidation of a stable and substantial income from independent sources can the autonomy and progressive development of a university be assured."

DISEASES OF ANIMALS COMMUNICABLE TO MAN.

PROFESSOR HOBDAY, C.M.G., who holds the chair of therapeutics and hygiene in the Royal Veterinary College, London, gave an address on "Some of the diseases of animals communicable to man" at a combined meeting of the Royal Society of Medicine and the Central Branch of the National Veterinary Association on February 3rd. Professor Hobday began by observing that the study of comparative medicine would throw much light on the symptomatology of disease and on immunity and susceptibility, certain species of animals being refractory or even completely immune to certain diseases. He then went on to point out that the list of diseases communicable from animals to man which exist at the present time in Great Britain comprises at least the following: Glanders, anthrax, tuberculosis, rabies, foot-and-mouth disease, mange of all animals (the horse, ox, camel, dog, cat), ringworm (especially of the horse, calf, cat, and mouse), and certain forms of seborrhoea (such as farriers contract from handling horses with greasy legs). The great prevalence of pyorrhoea in pet dogs, which are so kissed by their fair owners and allowed to lick their lips and hands, should be regarded as a possible factor in the spread of that disease in human beings. Certain parasites require an animal host in order to make their life-cycle complete before they can become pathogenic to man, such as the echinococcus, the *Cysticercus bovis* (the larval stage of the *Taenia saginata* of man), and *Cysticercus cellulosae* (the larval stage of *Taenia solium*), the parasites of measly beef and measly pork respectively; and the *Trichina spiralis* of the muscles of the pig, which give rise to trichinosis in man in countries where ham is largely eaten smoked, and not necessarily cooked.

Glanders.

Were glanders eliminated from the veterinary schedule, said Professor Hobday, it would disappear as a disease of mankind. In this matter the veterinary profession has to lead the way; that it is doing so is shown by the fact that in 1901 some 2,370 horses (1,828 from London) were destroyed for glanders in Great Britain, whereas during

1920 only fifteen outbreaks occurred in the whole of the British Isles, and only 22 animals were destroyed, and this after the sale of some 150,000 army horses and mules which had been collected from various countries and employed in the work of the great war.

Mallein is a sure diagnostic test and an important agent in the eradication of this disease. By its aid glanders was completely kept under control among the thousands of British horses and mules during the late war in Europe, and I believe that no case of glanders in man was reported; during the South African campaign glanders was terribly rife amongst animals and caused endless anxiety both to veterinary and medical officers.

Some fifteen or twenty years ago, in the districts of London which contained large cab and omnibus stables, it was rare for a County Council veterinary inspector to pass a day without being called in to see a suspected case of glanders, and I recollect one stud of about 2,000 horses from which we got some 90 glandered horses within twelve months. Mallein was then on its trial, and the law did not enforce its compulsory use in in-contact cases, the consequence being that when the owner of the stable had an outbreak of glanders he promptly sent the in-contact animals to a repository, and thus disseminated the disease broadcast. Twice I have officially been present at the *post-mortem* examination of men who had died of the disease, and in neither case was the disease suspected until just before death; one patient was treated for pleurisy and the other for rheumatism.

At the present time mallein is compulsorily applied by law to all ponies before they are sent underground for colliery work, and when an outbreak takes place in any stud or stable in any part of the British Isles the whole of the in-contact animals are immediately quarantined and tested. All animals that react are destroyed, and all suspects are set aside and re-tested, until the veterinary inspector is satisfied that a clean certificate can be given to the stud. During the late war special precautions were taken by the officers of the Royal Army Veterinary Corps to isolate and apply mallein to all animals on purchase, and again on admission to, and evacuation from, veterinary hospitals. Mallein was administered to all units at regular intervals and when finally sold either for work or for human food all were submitted to this test. In this way millions of doses were used, but the result justified the trouble taken, and no army of the whole allied force was so free from glanders as ours.

The infection is usually transmitted to man from a glandered horse, ass, or mule, by the discharge from the nose or a farcy bud, or by contact of an abraded surface with a sponge or brush, or other stable utensil, which has become contaminated with some of the infectious discharge from the animal. The possibility of infection of man by ingestion was emphasized by the late Mr. Hunting, Chief Veterinary Inspector of the London County Council, who observed men handling the nostrils of infected horses, and then eating their bread and meat, or bread and cheese, without washing their hands. The men most commonly affected are those whose life brings them into contact with horses. I believe I am correct in stating that there is only one instance on record in which a human patient has survived and permanently become clear of a glanders infection—the fortunate man being a well known member of my own profession; but it was only after endless operations and several years of painful treatment. One of those who died of this disease last year was a veterinary bacteriologist of the Government of India, a man of great promise, the disease being contracted during his course of duty. Among carnivorous animals glanders has been observed in lions fed in a zoological garden on infected horse-flesh which was given raw.

Anthrax.

Anthrax still takes its toll of both animal and man, being met with in man principally amongst those who have to deal with animal products, such as skin, hair, wool, and hides from abroad; and those who make, or assist, at *post-mortem* examinations on dead animals. The infected Japanese shaving brushes is another source of danger. The veterinary surgeon sees the disease most commonly in cattle, although it is met with in the horse, sheep, pig, and even the dog; in the dog it is rather more refractory than in other animals. The returns of the Chief Veterinary Officer of the Ministry of Agriculture for 1919 show that Wales had been absolutely free for three years, but that 180 outbreaks were confirmed in England and 59 in Scotland. In all, 275 cattle, 8 horses, 1 sheep, 38 pigs, 1 dog, and 7 ferrets were affected; 25 per cent. of the outbreaks took place on premises where anthrax had occurred during the previous year.

Owing to the precautions taken by the officials of the Ministry, the number of outbreaks has been reduced from an average of about 1,000 annually between 1907 and 1910 to 239 in 1919. If only the disinfection of imported hides, wool and hair, etc., can be thoroughly controlled, we shall hear of fewer cases in man, and the same may be said in regard to the supply of cottonseed and other cakes imported into Great Britain as a food for cattle. The surmises made as to the source of the outbreak in 1919 were that it was due (1) to the effluent of tanneries or other similar industries getting into streams, (2) to feeding pigs with infected offal, (3) to the use of imported foodstuffs and artificial manures, (4) to contaminated sewage, and (5) to contact with infected material from other outbreaks. It is by attention to the complete disinfection of animal products and the sources of contamination by animal products that we shall diminish the chances of infection to man. For animals themselves it is a more difficult problem as so much of their food material must of necessity come from abroad, and a good deal of it comes from countries in which anthrax exists to a considerable extent.

Rabies.

For nearly twenty years rabies had until lately no place in this country, and the present inconvenience from which dog-owners in several parts of England have to suffer is entirely due to the surreptitious importation of some dog which at the time was in the incubation stage of the disease. All Continental countries, with the exception of Norway, Sweden, and Denmark, are infected. Although mainly seen in the dog, rabies is also met with in the horse, cow, sheep, cat, fox, wolf, and even the fowl; in some of these animals the train of symptoms it produces is rather curious, and may not arouse any suspicion of the disease in the mind of the layman. Everyone knows something about the suspicious signs in the dog, although the classical symptoms are by no means constant. The change of manner, the desire to hide in dark corners, great excitability towards strange people and strange dogs, restlessness and weariness, snapping at imaginary flies, the attempts to chew and futile attempts to swallow all objects near at hand, the inability to swallow water, the continual salivation, and the final violent rage in the mad form—or the typically dropped jaw in the paralytic form—are all characteristic of the rabid dog. It is strange, too, what long distances the dogs will cover in their unconscious frenzy, wandering aimlessly on for miles; and it is for this reason that sometimes a large area or district has to be placed under the restrictions of the Ministry of Agriculture. The voice becomes altered, the bark being hoarse and accompanied by a most peculiar howl, the sound of which, when once heard, is never forgotten. Paralysis of the hind quarters and complete exhaustion and coma finally close the scene if the disease is allowed to terminate the animal's existence.

In the cat the symptoms are even more violent, and a rabid cat is even more to be feared by man than a rabid dog. It will bite and scratch, attacking men and animals in a most reckless fashion. The voice changes in tone, and eventually paralysis of the hind quarters comes. In the horse and ox there is violent excitement, and a particular symptom which has been noted again and again is an attempt to bite or rub the scar of the original site of infection, practically always the bite of a rabid animal. Sexual excitement is often present. Paralysis of the hind quarters is the common sequel, and the disease is always fatal.

The annual report of the Chief Veterinary Officer of the Ministry of Agriculture for 1919 showed that 143 cases of rabies were confirmed in that year (140 dogs, 2 horses and one pig). The first case was imported into Plymouth somewhere about May, 1918, and it is to this piece of criminal thoughtlessness on the part of someone that we owe the fact that we are now again an infected country. During 1919 alone some 179 persons were bitten by animals in the scheduled areas; of these, 46 were bitten by animals proved to be rabid. Treatment was arranged by the medical officer of the Ministry of Health, and it is a triumph to the memory of Pasteur that there have been no deaths from hydrophobia.

By the present arrangements the neck and head of any dog which has died or been killed as a rabies suspect is dispatched at once to the veterinary laboratory of the Ministry of Agriculture, together with a history from the field veterinary inspector who made the *post-mortem* examination. This is then dealt with at once, Negri bodies are searched for, and, if necessary, inoculation experiments are made; in 96 per cent. of cases a decision could be given at once, thus saving those patients who had been bitten much suspense and anxiety, and enabling the medical officer when necessary to advise immediate anti-rabies treatment. The necessity for the Muzzling Order still exists in certain areas, and both medical and veterinary

practitioners must be on the look-out for rabies. But there is no doubt that what has been done before can be done again, and by ridding our island of rabies amongst animals the veterinarian will again render signal aid to his medical brother.

Foot-and-Mouth Disease.

Foot-and-mouth disease is not of quite the same importance, as a disease communicable from animals to man, as those previously alluded to; if neglected, however, it would cause a certain amount of trouble in human beings through the ingestion of the milk. This is not at all uncommon in countries where foot-and-mouth disease is indigenous, and I am told of at least one definite case of contagion in England to-day—an official who was constantly examining mouths and feet. Foot-and-mouth infection comes only from infected cattle, but it may be transmitted to the sheep, goat, and pig, and horses and even fowls are not immune.

In most European countries it is always present, and it is owing to our insular position and the precautions taken by the Ministry of Agriculture that we have kept so free in the past. This country was entirely free from 1895 to 1899, and again from 1903 to 1908, with the exception of two small outbreaks which were easily suppressed. The origin of the present outbreak is very obscure; as the virus is an invisible organism and the disease one of the most insidious and contagious with which we have ever had to deal, its control has presented many difficulties. Had not the outbreak been taken firmly in hand at once it is certain that it would have cost the agriculturist millions of pounds. As an indication of the extent to which it will spread it may be mentioned that in 1892 in Germany no fewer than 1,504,299 cattle, 2,193,157 sheep, 17,782 goats, and 438,262 pigs were affected; in other countries of the Continent it raged with equal violence. Even so recently as the spring of 1919 the north of Italy was visited by a terribly virulent form of the disease, and a great many of the agriculturists of the provinces of Milan, Turin, Tuscany, and Cremona were ruined in consequence, as it affected not only the milking cattle but also the working bullocks.

Mange.

Three mange parasites are found on the horse—a sarcopt, a psoropt, and a symbiote—but it is the two former which give trouble; man may be infected from contact with mangy horses, their grooming tools, feed utensils, etc.; the infection usually occurs on the chest (especially if a hairy man) and the under surface of the forearm and on the hands. Riding a mangy horse has been known to infect men down the inside of the legs and in the pubic region, and during the late war this happened on numerous occasions; knackermen are frequently infected when employed in skinning mangy horses. Sarcoptic mange is very troublesome to get rid of in the horse; treatment takes several months. The psoroptic variety is much more amenable to treatment. Sulphur, in some form or other, forms the basis of most treatments. Measures had to be taken during the war for dealing with extensive outbreaks of the disease where large bodies of army horses were concerned. In Great Britain it is a notifiable disease.

That mange in the dog and cat is transmissible to man does not seem so generally known as it ought to be; some time ago Dr. Whitfield and myself published the histories of some seventeen cases in which he confirmed the existence of the sarcoptic parasite in the human subject, and I confirmed it in the dog.[1] When treating dogs it is not uncommon to find the owner of a mangy dog complaining of irritation of the skin, usually on the inside of the forearm, where the little dog rests its head when being nursed. The contact of the warm skin causes the mange parasite to leave its original host. In some of these seventeen instances the infection had taken place in the region of the neck and chest owing to the objectionable habit of allowing the little dog to sleep in that situation, and one lady was infected on the abdomen. The lesions produced were described by Dr. Whitfield as small discrete vesicles, slightly smaller than the ordinary eczema vesicle and surrounded by a narrow zone of hyperaemia, very like that of varicella, only about one-eighth of the size. The intense irritation leads to the decapitation of the little vesicles, and their original site becomes covered with either a serous or a blood scab. If left untreated the parasite will live in the human subject for about six weeks, but if treated is readily got rid of. In the dog we have two varieties of parasite, the *Sarcoptes canis* and the *Demodex folliculorum;* both are infectious to man, and the latter gives the veterinarian endless trouble to cure. Sarcoptic mange yields readily to treatment, but it takes about a month or six weeks to effect a certain cure. If neglected the dog becomes covered with scabs and sores, gets thin and emaciated, has a peculiar mousy odour, and will eventually die. The cat suffers from sarcoptic mange, which reduces the animal to a loathsome and miserable condition. The uncastrated male cat is, in all large towns, a fruitful source of the spread of sarcoptic mange amongst the females, and indeed to other males with whom he is constantly at war.

Ringworm.

All ringworm of the horse, calf, dog, and cat are contagious and give considerable trouble in their treatment. In country districts the calf is the constant source of infection, and in town generally the cat. Dr. Whitfield and others have recorded several cases of infection from animal to man.

Tuberculosis.

Professor Hobday dismissed tuberculosis briefly, the subject being, he said, so large as to call for a separate discussion. Before the war the subject of a clean milk supply and the eradication of tuberculosis from herds was being taken up with vigour; the work must be resumed; it was deplorable that at present milk inspection should so often be merely perfunctory.

[1] BRITISH MEDICAL JOURNAL, 1913, i, p. 407.

THE MENTAL AFTER-CARE ASSOCIATION.

THE annual meeting of the Mental After-care Association, which has done much valuable work during the last forty years in aiding the restoration to ordinary mundane activities of large numbers of poor persons discharged convalescent or recovered after treatment in mental hospitals, was held on February 24th at Bridewell Royal Hospital. Alderman Sir Charles Wakefield, Bt., who presided, after giving examples of the beneficent results of the Association's operations with the very limited funds at its disposal, announced his generous intention to defray the deficit of £70 outstanding at the end of last year. The report was read by Dr. Henry Rayner (Chairman of the Council), and its adoption moved by the Right Hon. Sir William Byrne, Bt., Chairman of the Board of Control, who drew attention to the great value of the timely help and assistance, on discharge, of necessitous patients in consolidating recovery and preventing relapse, incidentally referring to the high character of the services of the staffs of our asylums, sometimes ungraciously impugned by certain irresponsible sections of the press. The motion was seconded by the Bishop of Barking and carried. The re election of the officers was proposed by another member of the Board of Control, Dr. Hubert Bond, C.B.E., and seconded by the Hon. John Mansfield (Lord Chancellor's Visitor), and the adoption of the balance sheet, which showed an aggregate income for 1920 of £3,061 15s. 8d. (more than half of which was derived from charitable sources), was moved by Mr. Gabain and seconded by Sir George Savage, M.D., Treasurer of the Association. A hearty vote of thanks to Sir Charles Wakefield for presiding and for his generous donation, closed the proceedings.

The following statement of the methods adopted by the Association may give an idea of its varied activities. It facilitates rehabilitation into ordinary social life of suitable cases as follows:

1. By friendly visits, sympathy, and advice (if desired), and by keeping in touch with them as long as they need help in any way.
2. By boarding them out, when thought desirable, for a few weeks with families in the country, under proper care (in cottage homes).
3. By placing them in various institutions in London and other large towns until work can be found.
4. By finding them suitable employment.
5. By giving them grants in kind or in money towards maintenance while seeking work, by providing clothing, by redeeming or procuring tools when occupation is found.

The offices of the Association are at Church House, Dean's Yard, Westminster, and the Secretary is Miss E. D. Vickers.

British Medical Journal.

SATURDAY, MARCH 5TH, 1921.

PUERPERAL MORTALITY IN 1919.

IT is a disheartening and almost humiliating discovery to find by the Registrar-General's report that puerperal mortality in England and Wales, both as a whole and as regards puerperal sepsis separately, was greater in 1919 than in any year since 1905.

The number of deaths assigned to pregnancy and childbirth in 1919 was 3,028, corresponding to a rate of 4.37 per 1,000 births, but in order to compare with causes of death under the classification in use up to 1910, 176 deaths allocated to "puerperal nephritis and albuminuria," formerly not distinguished as puerperal, are deducted. This brings the 1919 mortality rate down to 4.12 per 1,000 births, as against an average rate of 3.74 in the ten years immediately preceding.

Unfortunately the Registrar-General finds that "the increase in 1919 is preponderantly due to septic disease," which is very difficult to explain considering the efforts which have been made to educate both medical students and pupil midwives on the need for surgical asepsis in midwifery. The mortality due to sepsis, including phlegmasia alba dolens, in 1919 was 1.76 per 1,000 births, the highest rate since 1905, when it was 1.87. This is particularly disturbing when it is remembered that in 1918 the mortality rate, both from all causes (3.55) and from "sepsis" separately (1.35) per 1,000 births, was the lowest on record, except that in the one year 1913 the deaths from sepsis were 1.34 per 1,000 births.

It would seem that our present methods for preventing puerperal infection are still insufficient. Over seventy years ago (1847) Semmelweis, then an assistant at the Vienna Lying-in Hospital, began an inquiry into the cause of the 10 per cent. puerperal mortality of his hospital patients as compared with those attended at their own homes, and came to the conclusion that the morbid process was a wound infection due to the introduction of septic material by the examining finger. The mortality fell to 1 per cent. after he insisted upon hands being disinfected with chlorine water; but his views were not appreciated, nor were they adopted either here or elsewhere. In 1873 Lister initiated antiseptic methods in surgery, but it was not then realized that the principle should be applied to midwifery. In 1865 Mayrhofer discovered that streptococci were often present in the tissues of women who had died from puerperal fever. In 1872 the Obstetrical Society of London appointed a strong standing committee to "collect evidence on temperature during pregnancy, parturition, and the puerperal state." Its object was to show how puerperal fever might be prevented, and special efforts were made to get midwives properly trained.

In 1905 the Central Midwives Board took over the Society's examination work, and under the able chairmanship of Sir Francis Champneys excellent work has been done; some reduction in the deaths due to puerperal septicaemia ensued, for the death rate from this cause, which had never been less than 2 per 1,000 births (except in 1898, 1.91), gradually fell to 1.42 in 1910 and 1.34 in 1913. More than this had been expected from compulsory education, examination and registration of midwives, but the necessity of putting 12,521 untrained women, practising as midwives, upon the roll no doubt vitiated the result.

In 1880 Pasteur cultivated streptococci from cases of puerperal fever, and it gradually dawned upon civilization that the mortality was due to infection. Other germs, such as staphylococci and the *Bacillus coli communis*, are sometimes infective agents, but are usually found in combination with streptococci. Dr. Victor Bonney's contention that puerperal sepsis is largely due to infection by the bowel organisms from the patient herself, owing to the parturition and defaecation areas being so closely adjacent, must not be forgotten in this connexion, but it is difficult to accept his statement that "Nature has made the mistake of placing the birth area almost in the middle of this danger zone."

The Registrar-General divides deaths of women in pregnancy and childbirth into two large groups. The first contains 3,028 deaths classed as due to pregnancy and childbirth, and includes deaths from puerperal sepsis and from "other accidents of childbirth." The second group consists of 1,337 deaths of women not classed as due to pregnancy or childbirth, but "associated therewith." The first group consists of (*a*) conditions which, if detected during pregnancy, could be so dealt with, then or at a later date in the pregnancy, that maternal deaths would very rarely occur. Amongst these may be named (with deaths in brackets) contracted pelvis (47), craniotomy (9), malpresentation (12), hydatid mole (6), retroversion of the gravid uterus (6). (*b*) Cases many of which probably died for want of prompt or expert treatment, in sudden or unexpected "accidents" of pregnancy or childbirth, such as abortions (121), some probably criminal, ectopic gestation (73), placenta praevia (169), haemorrhage of pregnancy (43), rupture of uterus (20), inversion of uterus (8), inertia uteri (7), abnormal foetus (9), difficult or prolonged labour (44). (*c*) Deaths due to toxaemia of pregnancy. These are not grouped under that head, but separately, such as uncontrollable vomiting (28), puerperal nephritis and uraemia (131), puerperal albuminuria and Bright's disease (44), puerperal convulsions (420). Many of these cases might have been saved if detected in the early stages of toxaemia by routine urine analysis. (*d*) Deaths from puerperal fever, including those from phlegmasia alba dolens (51), numbered 1,208. Probably some of the deaths from "puerperal embolism and sudden death" (179) may have been infected cases.

Nearly all these deaths from "puerperal fever" (or as they should now be termed "puerperal infection") should be preventable, for true autogenetic cases are very rare. It would seem that the doctor or midwife concerned must deal with parturition as a surgical process, avoiding all unnecessary contact with the maternal tissues and all rough usage where contact is required; the tissues involved in the birth exit and the areas around must be treated as he would the tissues round a proposed vagino-perineal plastic operation. The modern doctrine is that the accoucheur must wear recently boiled rubber gloves and a sterilized overall on every occasion when examination is necessary. He must recognize early in labour the conditions likely to lead to delay or complication and arrange for the necessary assistance. He and his assistants must be free from dental caries, ozaena, etc., and from all other sources of infection. These aseptic precautions are now taken in all maternity wards and hospitals, and puerperal epidemics do not now occur.

The question arises, therefore, why there is not equal freedom from puerperal infection outside hospital clinics. Most of the midwifery (probably 70 per cent.) of the country is in the hands of midwives, and they ought to be in touch with qualified practitioners. Midwives are now well instructed, and their work is carefully inspected and supervised. Many writers, including teachers of obstetrics in every school of medicine, have repeatedly drawn attention to the subject during recent years. They have discussed the prevention of infection and better education in practical midwifery, so that students may be prepared not only to anticipate complications by ante-natal supervision, but be able to deal with them effectively when they arise. To do this, it is maintained, the student must have seen women delivered by experts in special lying-in wards which are equipped as fully as operation theatres for all emergencies, and must have seen all the minor operations of version, forceps, etc., performed by skilled teachers and have had some opportunities for personal experience.

Every general practitioner practising midwifery should be an expert. Obstetrics is not a speciality which can be in the hands of a few, like some other specialities, for at any moment the accoucheur, perhaps soon after being qualified, may be called upon to deal with a sudden emergency during pregnancy, childbirth, or the puerperium; such a case will not be met by a consultation in a few days' time; it must be dealt with at once. It is almost impossible with the present supply of maternity beds to enable this experience to be gained during a student's curriculum. This is perhaps more particularly true of London. Every general hospital should have a maternity ward or be associated with a lying-in hospital.

Even if a doctor has had special midwifery training, he—and perhaps still more the midwife—is seriously handicapped, both as regards sepsis and space, by the conditions of the rooms where women are confined in poor and middle class practices. Dr. Victor Bonney's graphic word picture of such a bedroom loaded with furniture and oddments is not exaggerated, and the difficulty of its conversion into an aseptic lying-in room is not overstated. Yet there is at present no possibility of getting all parturient women, or even all primigravidae, into a local cottage hospital or maternity ward.

If ante-natal supervision were universally adopted, and complications anticipated, and if there were a more definite linking up of patient with midwife, doctor and hospital, the incidence not only of infection but of all other accidents of pregnancy and childbirth would be greatly diminished, and puerperal mortality and morbidity would continue to decrease.

The second large group of 1,337 deaths are those "not classed as due to pregnancy and child-bearing, but returned as *associated* therewith." Inclusion of these deaths raises the proportion of deaths caused by or associated with pregnancy and childbirth to 6.3 deaths per 1,000 births. These deaths may be divided into two smaller classes. The first class contains deaths due to conditions, usually acute, which do not arise from, but complicate, the pregnancy or childbirth, such as influenza (585), lobar pneumonia (76), bronchopneumonia (34), scarlet fever (10), appendicitis (10), intestinal obstruction (10), acute phthisis (13), enteric (3). Some of these influenzal deaths may have been cases of puerperal infection: the distinction is sometimes very difficult. The second class consists of deaths due to the *association* of pregnancy or childbirth with pre-existing, usually chronic, pathological states, such as heart disease (177), pulmonary tuberculosis (66), Bright's disease (37), anaemia (21), epilepsy (8), syphilis (7), cancer (6), diabetes (6). Cases in both classes, if in hospital, would be usefully seen by experts in both obstetrics and in medicine or surgery as indicated by the particular complication present.

THE PANDEMIC OF INFLUENZA, 1918-19.

THE Ministry of Health has come in for a great deal of criticism in the lay press, some of it undeserved and apparently due to political considerations; some it brought on itself. We warned the Ministry from the first that the introduction of its Miscellaneous Bill was a mistake, for reasons now apparent. But the medical profession looks to the Ministry for much more than legislation. In fact, legislation is only an incidental function; its important duties are the review of administrative effort in the light of increasing knowledge, and the collection and dissemination of information, especially with regard to epidemics. An excellent illustration of the intelligence work the Ministry of Health can do is afforded by the recent report on the pandemic of influenza 1918-19.[1]

This intensive study of a devastating historical epidemic in all its aspects is summarized in a philosophic introduction by the chief medical officer, Sir George Newman, who again emphasizes the unitary character of the problems of health and disease, and points out that the only sure defence against sudden and terrible epidemics is to raise the whole standard of life not only in this country but in all countries. The report is especially rich in its epidemiological aspects, which are dealt with in an article published at p. 348; the clinical section contributed by Dr. Herbert French will appeal very directly to the medical practitioner; it covers familiar ground and its conclusions can be tested by the results of his own experience.

The pandemic consisted of a first wave in June, 1918, of a comparatively mild character—"the influenza of the three-day fever type"—with sudden onset and fever running up to 103° or 104° F., and a rapid convalescence, so that the great majority of the patients were fit for work by the end of a week; there was little tendency to complications, and only those disposed to bronchial catarrh by chronic bronchitis or emphysema suffered from pulmonary infection. Very different was the second wave in the autumn with a recrudescence in February, 1919, for though the general type of cases was much the same as in the first wave, there was a tendency to severe and fatal pulmonary complications. Broadly speaking, it is estimated that out of 1,000 persons attacked during the second wave fully 800 had an ordinary attack of uncomplicated influenza, very commonly with epistaxis, and perhaps rather more severe than the three-day fever of June, 1918; the remaining 200 were severely ill with pulmonary complications, and of these about 80 (or 40 per cent.) died. This may also be illustrated by Sir Robert Hill's[2] figures from the Royal Navy, where the first wave was accompanied by 0.4 per cent. of complications and 0.03 per cent. mortality, whereas in the autumn wave the incidence of complications was 6.8 per cent., and of deaths 2.8 per cent. The explanation tentatively suggested by Dr. French for this remarkable seasonal change of type is that whereas the *Bacillus influenzae* alone may be responsible for the 800 mild cases, one or more

[1] Report on the Pandemic of Influenza, 1918-19. Reports on Public Health and Medical Subjects. No. 4. Ministry of Health. 1920. pp. 577. 10s.

[2] R. Hill: *Journ. Roy. Sanit. Instit.*, 1919-20, xl, 21.

additional organisms are virulently associated with Pfeiffer's bacillus in the 200 grave cases; in other words, while the mild cases are examples of influenza alone, the grave cases may be described as influenzo-pneumococcic, influenzo-streptococcic, or influenzo-pneumo-streptococcic septicotoxaemia. This attractive solution is, of course, subject to the moot question of the causal relation of Pfeiffer's bacillus to influenza, and although a number of observers—for example, Fildes and McIntosh—incline to this view, Sir Frederick Andrewes (vide p. 348) concludes that the claim for *Bacillus influenzae* that it is the primary cause remains unproven, and that it should be included among the secondary invaders "without prejudice to its possible claims to be regarded also as the primary cause of the disease."

In the cases with pulmonary complications the most dreaded manifestation was the "heliotrope" cyanosis; it occurred in less than half the cases, but was followed by death in about 95 per cent. Although this heliotrope cyanosis was noticeable on account of its frequency during the pandemic, it was not a new phenomenon, for it had been noted in small epidemics of "purulent bronchitis" in 1916 and 1917. The only similar cyanosis—the variations of which are well illustrated in three coloured plates from the paper written in collaboration with Abrahams and Hallows,[3] and obviously forming the basis of this report—is that seen in gassed patients, who, however, are much distressed, whereas the influenzal cases are not to anything like the same extent. The cyanosis is not due to cardiac failure or to chemical changes in the blood, and is not relieved by bleeding; it is the outcome of anoxaemia caused by widespread and extensive albuminous exudation into the alveoli and interstitial tissues of the lungs. The pulmonary complications—often with physical signs of slight bronchitis when more were anticipated—may appear at any stage. They may constitute the initial symptom without any preliminary influenzal manifestations and then simulate ordinary lobar pneumonia; or they may come on after nearly a week's illness, or even during convalescence. Most often they supervened after a day or two of simple influenza; a sudden and rapid change for the worse then took place, with evidence of pulmonary lesions, which were often so fulminating as to prove fatal within forty-eight hours, apparently from a generalized and extremely virulent toxaemia or septicaemia. The amount and character of the sputum varied much; there might be 8 to 10 oz. of pus daily, as in "purulent bronchitis," or there might be little or none; it might be frothy or rusty, and the same patient might bring up sputum of different character on successive days. The physical signs also showed wide diversities in cases otherwise alike, and, generally speaking, the paucity of abnormal signs was in striking contrast to the degree of illness. In most cases the classical signs of pneumonia never appeared, but pleuritic friction was commonly present.

The report contains an account of the morbid anatomy and histology of the disease, which may be read in conjunction with the masterly description of the pneumonia in the United States army camps during the winter of 1917–18 by Professor W. G. MacCallum,[4] of the Johns Hopkins Hospital, who says that the changes were practically the same as those described by Drs. Abrahams, Hallows, Eyre, and French in 1917, the main differences being the rarity of pleurisy and the predominant part played by the influenza bacillus in the Aldershot cases. MacCallum describes two main types which were often combined, namely, interstitial bronchopneumonia and lobular pneumonia, both due to the *Streptococcus haemolyticus*. Dr. French insists that the lung changes were practically never those of ordinary croupous pneumonia, but a complex and variable mixture of inflammatory lesions of which broncho-pneumonia formed a part only, also showing acute pleurisy in many cases, diffuse haemorrhagic areas and infarcts, miliary abscesses, purulent bronchiolectasis, oedema, collapse, and emphysema; and to prevent confusion with pneumonia the term "pneumonitis," with mention of the more prominent lesions in the different types, is suggested. Stress is also laid on the existence of a general toxaemia or even septicaemia with morbid changes elsewhere, especially in the kidneys. In the section on treatment, while the failure of various methods, including vaccine and serums, is frankly admitted, the hypodermic injection of serum from convalescent patients, as employed by Dr. Huff-Hewitt,[5] is referred to as promising and deserving a full trial. This has, in fact, been employed in the American navy[6] on a considerable scale for the pulmonary complications of influenza, especially by McGuire and Redden, who treated 151 patients with a mortality of 6, or 4 per cent.

[3] *Lancet*, January 4th, 1919. pp. 1–11.
[4] W. G. MacCallum: Monographs of the Rockefeller Institute for Medical Research, No. 10, April, 1919 (BRITISH MEDICAL JOURNAL, 1919, II, p. 415).

COMPARATIVE MEDICINE.

THE lessons that might be learnt from the results of injury and disease in plants was the subject of one of Sir James Paget's most striking essays, delivered as an address to the Pathological Section of the British Medical Association at Cambridge in 1880. Eight years later Sir Clifford Allbutt made an appeal for the study of comparative medicine the main topic of his Address in Medicine to the Association at its meeting at Glasgow; in his Presidential Address to the Association last year he told us that the Glasgow appeal found "no response, hardly an echo." In 1880 Sir Henry Acland, then Regius Professor of Medicine in Oxford, advocated the foundation of a chair in general comparative pathology, and the Regius Professor of Physic at Cambridge forty years later has to declare that "without an institute of comparative pathology in Cambridge our range of vision and work is contracted." The institute he contemplated would be concerned not only with those diseases enumerated by Professor Hobday in the address he gave to a recent combined meeting of the Royal Society of Medicine and the Central Branch of the National Veterinary Association, as reported at page 351, but with many other diseases of animals, and with those of crops and forests. In a letter addressed to Professor Hobday on the occasion of his recent lecture Sir Clifford Allbutt recalls how, since his Glasgow address in 1888, he has been speaking and writing to urge the consolidation of the study of medicine in all its branches, since without the comparative method the progress of our art and its sciences cannot make active growth on the larger lines. He goes on to point out how there is far more in the matter than merely the peril to men from animal diseases, for only in the light of disease as a whole can its parts be adequately known and its intimate laws understood. He again reminds us that, in order to realize the need of the comparative method, it is only necessary to look at the fertile results of the comparative method in other studies—in comparative anatomy and morphology, in history, languages, and religion, and indeed in every subject of thought which has advanced far enough to avail itself of the method. At Cambridge there is in the field laboratories, agricultural department, and so on, much of the groundwork for such an institute of

[5] Huff-Hewitt: BRITISH MEDICAL JOURNAL, i, 1919, p. 575.
[6] Annual Report of the Surgeon-General, United States Navy, for the fiscal year 1919; p. 448; Washington.

comparative pathology, but money is wanted. Let us share with him the hope that the pedigree stock-breeders, racing men, nurserymen, foresters, and others interested in such matters who are now suffering enormous pecuniary losses may endow Cambridge with the means of establishing such an institute adequately equipped for practical and theoretical work in comparative medicine, both of plants and animals. Short of this something may be done by recognizing, first, that experts on diseases of animals and plants ought to come together for discussion, and, secondly, that in our great universities are many students who, if opportunity were afforded, would find themselves attracted by the larger field and the endless variety of experience and opportunity of research which comparative pathology would offer to their enterprise.

THE ROYAL SOCIETY.

AMONG the fifteen names recommended by the Council of the Royal Society for election to the Fellowship are two pathologists and one ophthalmologist. Dr. John C. G. Ledingham, C.M.G., has been chief bacteriologist to the Lister Institute, London, since 1909, and is reader in bacteriology in the University of London. He had a brilliant career as a student at Aberdeen, and after a period of post-graduate study at Leipzig and the London Hospital, became assistant bacteriologist to the Lister Institute in 1905. His contributions to bacteriological literature, some of which have appeared in our columns, are numerous, and he is the author, with Dr. Arkwright, of a book published in 1912 on *The Carrier Problem in Infectious Diseases*. Dr. Georges Dreyer, who is of Danish birth, graduated at Copenhagen, and has been professor of pathology at Oxford since 1907. He is well known for his work on immunity. Mr. John Herbert Parsons, C.B.E., F.R.C.S., surgeon to the Royal London Ophthalmic Hospital and ophthalmic surgeon to University College Hospital, has made many important contributions to ophthalmology. Among the other new Fellows are Mr. George Udny Yule, C.B.E., university lecturer in statistics, Cambridge, and Dr. Wilfred Agar, lecturer in zoology in the University of Glasgow.

LETHARGIC ENCEPHALITIS.

So far as statistics are available, it would appear that the number of cases of lethargic encephalitis in Great Britain tends to diminish; in London 29 were notified in the last week of January, and only 9 in the third week of February. The Ministry of Health has, however, considered it desirable to issue a circular letter to medical officers of health asking them to assist in the investigation of the disease, both by direct inquiry and by supplying information obtained through the courtesy of the notifying practitioner. The circular is accompanied by a memorandum,[1] dated February, 1921, in which lethargic encephalitis is defined as a general infectious disease, characterized by certain manifestations originating in the central nervous system, of which the most frequent and characteristic are progressive lethargy or stupor, and a lesion in or about the nuclei of the third pair of cranial nerves. As is now well known, a large number of cases of the disease do not conform to this type, and it is particularly important to remember that some begin with excitement; such cases may from the first or from an early stage be accompanied by muscular jerks and by severe pains in the limbs, due to affected nerve roots. In a typical case, after a period of incubation the duration of which is not known, there ensues a prodromal stage, lasting a week or even two or three weeks, and characterized by somnolence, headache, double vision and general lassitude. The patient may complain of soreness or dryness of the throat, and sometimes vomiting and diarrhoea occur. The temperature rises usually to 101° or 102°. Other symptoms at this stage include asthenia, stupor (alternating often with nocturnal delirium), difficulties in speech and spasmodic twitchings of the face and limbs, such as occur earlier in the unusual so-called myoclonic cases. There is no characteristic rash, but transient skin lesions are often present, the most frequent being erythema; petechiae may develop or an eruption, recalling that of measles or scarlet fever. As is well known, the most common nervous sign is diplopia, often accompanied by ptosis; sometimes there is complete ophthalmoplegia, external or internal. Paralysis of the face, tongue and pharynx, increasing rapidly or gradually in intensity, is not uncommon, but paralysis of the limbs and sensory troubles are exceptional. Retention of urine may occur, but incontinence is more common; it may be accompanied by loss of control of the anal sphincter. Death, which is commonly preceded by an increase in delirium and stupor, merging into coma, appears to be due to paralysis of the respiratory nervous centres. The stupor may clear away in a few days or persist for several weeks, even as many as eight. Recovery may ensue even after these long periods; the mortality of cases recognized as lethargic encephalitis in 1919 was about 50 per cent. The real mortality is no doubt lower, as it is not easy to recognize the true nature of mild or abortive cases. Diagnosis is, indeed, often difficult, but local palsies, or, in myoclonic cases, root pains, will suggest the possibility of lethargic encephalitis. It has been shown experimentally that the disease is communicable by intracerebral and intraperitoneal injections, but the infectivity is low. Multiple cases in the same household have occurred, a striking example being afforded by the outbreak at the Home at Derby noted in our columns of February 19th, p. 277. Usually the disease appears to be sporadic, but there is good reason to think that the recognized cases are connected through persons who suffer mild attacks presenting only persistent apathy, headache, and lack of facial expression, or only such common symptoms as soreness of the throat, naso-pharyngeal catarrh, and headache, accompanied, possibly, by vomiting or diarrhoea. If occasion occurs to examine such cases carefully, a short feverish period may be detected, or there may be transient interference with vision, the pupils being dilated but insensitive to light. If diplopia, facial paralysis, or ptosis, even though transient, occur, there can be little doubt about the diagnosis. As the disease is infectious, the patient, if kept at home, should be well nursed and isolated as far as possible from other members of the household. Removal to hospital, however, is much to be recommended. The only drug which has been supposed to influence the course of the disease is hexamine; its efficacy is very doubtful, but if given in moderate doses it can at least do no harm. The withdrawal of cerebro-spinal fluid by lumbar puncture is often followed by diminution of stupor, and in some cases repetition of the operation has been beneficial. The Ministry of Health will continue to examine specimens of cerebro-spinal fluid forwarded to it through the medical officer of health.

[1] H.M. Stationery Office. Through any bookseller, 1d.

THE CONTROL OF THERAPEUTIC SUBSTANCES NOT AMENABLE TO CHEMICAL ANALYSIS.

THE principle which hitherto has guided the General Medical Council in the adoption of standards for articles in the *British Pharmacopoeia* has been to prescribe only such chemical and physical tests of purity and composition as were capable of being carried out by skilled pharmacists or analysts in any part of the Empire; in the preparation of the last edition the Pharmacopoeia Committee came to the conclusion that to direct tests which called for the employment of animals, would be to require conditions at variance with this principle. At the same time the importance was felt of fixing some authoritative standard for such therapeutic agents as serums and vaccines which could at least be referred to in the *Pharmacopoeia*. In 1909 a resolution was accordingly

passed by the Pharmacopoeia Committee authorizing the President of the General Medical Council "to approach the Government with a suggestion for the establishment of a public institution for the pharmacological standardization of potent drugs and of serums." The Government were approached accordingly, but it was not found possible to take immediate steps in the direction indicated, and it became evident that nothing could be done in time for a fresh edition of the *Pharmacopoeia*, which ought to have been published in 1912, but did not appear until 1914. Standardization of such substances as vaccines, serums, antitoxins, and analogous products, is left at present wholly to the private enterprise of manufacturers, and each maker is free to adopt his own conception of adequate standards. Hence any guarantee of potency and authenticity entirely depends upon the reputation of the supplying firm. The reputation of the British manufacturers of these substances is deservedly high, but there are obvious disadvantages attaching to the present state of affairs, especially as these products may be imported into this country without check or guarantee of any kind. Manufacturers have perforce had to adopt foreign standards to which reference can be made in cases where biological assay is necessary, as there are no British standards in existence. Accordingly, in April, 1920, the Minister of Health appointed a committee to consider and advise upon the legislative and administrative measures to be taken for the effective control of the quality and authenticity of such therapeutic substances as cannot be tested adequately by direct chemical means. The substances included may be classified into: (*a*) a group comprising the bodies conveniently described in the United States Regulations of 1919 as "biologic products"—that is, vaccines, antitoxins and the like; (*b*) a group of potent synthetic remedies, such as salvarsan and its analogues; (*c*) a group corresponding more nearly with the ordinary definition of "drugs"—for example, digitalis, strophanthus, ergot, cannabis indica, and pituitary gland. Most of the substances in the last group are included in the *British Pharmacopoeia*, and certain primitive tests and methods of identification are therein provided for them, but there is a considerable volume of opinion that these tests are far from adequate as standards of therapeutic efficiency, and although the application of physiological standards to substances in this group is hardly of the same importance as in the two former groups, such standards would be accessory guarantees of efficiency. The Committee examined a large number of witnesses representing not only scientific bodies, but also firms actually engaged in the manufacture and sale in this country of the substance under consideration. As the result of the investigations the Committee's report, which is now published,[1] recommends that therapeutic substances which cannot be tested adequately by chemical means should be subject to supervision and control under the authority of a committee of the Privy Council assisted by an advisory committee. There should be a central laboratory under Government control, wherein standards would be prepared and maintained, research on the subject carried out, and tests made to ascertain that the products issued by manufacturers conform with the standards laid down. It is recommended that the Medical Research Council, which already possesses the requisite organization, should be responsible for this central laboratory. The method of control should include the licensing of manufacturers, inspection of their plant, premises, and processes, and the testing of the finished products, preferably from samples taken from makers' stocks or bought in the open market, leaving to the manufacturers the primary responsibility for securing that the products conform with the prescribed standards. Products made abroad should be subject to restrictions similar to those applying to products made in the United Kingdom, and licences should be granted to approved manufacturers, while in addition steps should be taken to ensure that each consignment imported attains the standards laid down for similar products of home manufacturers.

[1] Report of the Departmental Committee on Control of Certain Therapeutic Substances. H.M. Stationery Office. 1921. Price 2d. net.

DISABLED SOLDIERS AND THE DIAMOND INDUSTRY.

In view of the importance of the question of employment for disabled soldiers, the work that is being done at the Bernard Oppenheimer Diamond Works is of interest. These consist of a series of fine buildings at Brighton, capable of holding 2,000 workmen, and of subsidiary branches at Cambridge, Fort William, and Wrexham, which can train 250 additional men. The industry is a new one in England, and the work is being carried out practically in its entirety by disabled men. Nearly half of the men are suffering from disability due to amputations, while the disabilities of the majority of the others are due to gunshot wounds, either of the shoulder and arms, or of the thigh and legs. The undertaking has passed the experimental stage, and is now on a sound financial basis. Much credit is due to Sir Bernard Oppenheimer for the risk he undertook in staking, not only his reputation as a successful diamond merchant, but also the large outlay in capital which was necessary. Credit is due also to the Ministry of Pensions and the Ministry of Labour for their co-operation in endeavouring to smooth over many difficulties which at first must have been almost insurmountable. At the time of the establishment of the first wing of the factory the greatest difficulty and inconvenience was found in carrying on concurrently the training and at the same time the necessary medical treatment of the men. It was necessary for them to attend at a hospital or private clinic, sometimes daily or twice daily, at hours which were invariably the regular working hours, with the result that each treatment meant the loss of half a day's work. As there were occasions when 25 per cent. of the employees were absent undergoing treatment, it was manifestly impossible to train men under these conditions, and with the approval of the Ministry of Pensions a clinic was established on the premises. The clinic consists of one room for massage and electrotherapy, one for remedial exercises, one for *x* rays and high-frequency and diathermy apparatus, one room as a surgery, a waiting-room, a room for the medical referee, and another for the works doctor. The saving of time by having the clinic on the spot is enormous; there is no waste, as each man has his definite hour for treatment or comes when sent for by the orderly. On an average 60 to 70 pensioner-employees receive massage, electrical, remedial, or combined treatment every day. The results have been very satisfactory, and some twenty patients are discharged each month, benefited or cured, while in the surgery twenty cases on the average are dressed every day—for discharging sinuses, stump infections, or other conditions due to war service. The kind of treatment and its duration are left entirely in the hands of the medical referee, Colonel Langmuir Watt, C.M.G., and there is no attempt to carry on treatment for conditions other than those due to war service, except first aid in the case of accidents. The clinic has also been made a limb-fitting centre; a stock of the more perishable parts of artificial limbs is kept in the clinic and issued as required, and there is little or no delay, as minor repairs take only a few hours, and more serious repairs never longer than from one to two weeks. New limbs are obtained as rapidly as if the men were at Roehampton. The great problem still to be solved, Colonel Langmuir Watt tells us, is the provision of a working limb—as distinct from a walking limb—which can permit of its wearer sitting down for four hours at a stretch without causing pain or discomfort, or overheating of the stump. A hut adjoining the works has just been erected by the British Red Cross Society and the Order of St. John of Jerusalem, where they will be

able to carry on satisfactorily the fitting and manufacture of peg legs, surgical appliances and surgical boots. Arm amputations are not very suitable for the work, but even these cases have been successfully trained, some fitted with a special mechanical appliance invented in the works, while there are many men with more or less useless arms, due to such conditions as ankylosis or paralysis, earning average wages. The actual work of diamond polishing is naturally very exacting, and the men must possess good eyesight, sound nervous systems, and intelligence rather above the average. All applicants for training have to undergo a careful practical test of their fitness; this is of benefit not only to the Ministry of Labour, but also to the works, as it tends to prevent men from being released after a few days' trial with the necessity of finding a new training for them. Canteens and a recreation room have been provided for the men. Their period of training is eighteen months, though actually after six months of works attendance a man is supposed to be able to earn his living. During these six months the sum of £2 a week is paid by the Ministry of Labour, at the end of that period a man goes on works pay, the minimum being £2 a week—of course entirely independent of his pension—from which he may rapidly rise, as many of the men have done, to £5 or £7 weekly. Medical practitioners who are interested in this subject are invited to visit the works.

DECEREBRATE RIGIDITY IN MAN.

IT has been thought and even stated in some quarters of recent years that medicine can expect to learn little more from purely clinical observations. Neurology, however, is fortunate in being a branch of medicine in which original clinical observations continue to lead to great increase in our knowledge of the functions of the central nervous system as a whole. And we are proud to be able to say that in this field British neurology can fairly claim a prominent place. Dr. Kinnier Wilson's[1] recent contribution is a shining example, if such were needed, of the value of careful and prolonged clinical study of symptoms which, though familiar to many, have hitherto eluded satisfactory explanation. He has drawn a luminous comparison between the experimental decerebrate rigidity of animals (following transection of the brain stem through the mesencephalon) and certain cases in man "in which there is evidence of withdrawal of cortical control in the form of unconsciousness or semiconsciousness coupled with the appearance of tonic rigidity of the trunk or limbs, with exacerbations in the form of tonic or postural fits." The first group of cases quoted are examples of decerebrate rigidity combined with tonic fits, and pathologically comprised a tumour of the frontal lobe with haemorrhage into the ventricles, a tumour of the mesencephalon, general septic meningitis with some internal hydrocephalus, a case of cerebral haemorrhage with extension into the ventricular systems of the brain, and a case of tuberculous meningitis with moderate internal hydrocephalus. The description of these cases is very full and vivid, and the author points out how the tonic posture was maintained, while the actual fits were an accentuation, so to say, of the already existing decerebrate position. The absence of any clonic element in the fits is emphasized. Tonic or "cerebellar" fits, as they were originally called, may occur without the maintenance of the decerebrate posture, and a very striking example of such a condition is given in full. Their association with hysteria is also pointed out, the position of opisthotonos with extension of the legs and extension and pronation of the arms being a well recognized phenomenon. Of particular clinical interest are those cases which exhibit a unilateral or fragmentary decerebrate attitude in one limb only. The so-called decerebrate attitude of the head may be thus explained. The extreme pronation of the hand which is found, for example, in athetosis or chorea is held by the author to be but a fragment of the complete picture of the decerebrate posture. In explaining the pathogenesis of this condition tribute is paid to the theory of "cerebellar influx" propounded as long ago as 1877 by Hughlings Jackson. The numerous experimental researches of Sherrington, Graham Brown, Weed and others, however, point to the conclusion that the mesencephalon is the principal site responsible for the maintenance of the decerebrate posture; and the red nucleus is credited with particularly important functions in this respect. We are promised a further study on the part played by the basal ganglia in the regulations of these functions. No student of neurology can afford to miss this communication, to which a full bibliography is attached; and further contributions will be awaited with interest.

[1] S. A. Kinnier Wilson, *Brain*, vol. xliii, Part iii, 1920.

THE RETARDED CINEMA.

LAST week Dr. Gustave Monod-Walter gave a demonstration at the house of the Royal Society of Medicine on the cinematograph, which excited so much interest that he consented to repeat it this week. The films were taken at the rate of about 300 pictures to the second, slowed down when exhibited to perhaps fifteen or twenty in a second. In this way every detail of movement can be observed, and it has been hoped—a hope not yet realized—that the method would be of value in the study of movement. The first film was of a type fairly familiar in this country—jumping and putting the shot; and the second, of the isolated mammalian heart, showed in a film what most British students of to-day have seen in the laboratory. The last film, taken at the Institut Marey, Paris, was an analysis of the drive, approach and putt as performed by the French golf professionals Lafayette and Botcazou—the latter one-armed; this film excited, it must be confessed, a good deal more interest than the others, partly, perhaps, because of its novelty, but partly because the majority of the audience appeared to be golfers. A study of it may perhaps help the inexperienced player or he who is off his game; but we are inclined to agree that the object to be attained rather than the means of attaining it should be had in mind, or, as Dr. Monod-Walter said, the player should trust to his imagination rather than to his will.

MEDICAL SCHOLARSHIPS FOR SERBIAN GIRLS.

A DRAWING-ROOM meeting was held on February 10th at 28, Kensington Court, by kind invitation of the Lady Swaythling, in aid of a scheme for raising a fund to endow one or more scholarships for Serbian girls in connexion with the London School of Medicine for Women and the Royal Free Hospital. The successful candidates will be required to undertake to return to practise in their own country when qualified. The speakers were Sir Willoughby Dickinson, Dr. Mary Scharlieb (chairman of the fund), Dr. Dickinson Berry (the honorary secretary), and Mrs. Carrington Wilde. The scheme was recommended as a fitting memorial to the work of medical women in Serbia and as a means of helping to maintain the cordial feelings between Serbians and Britons produced by intercourse during the war. The outlook of Serbian women, it was stated, has enlarged greatly since the beginning of the war. There is a keen desire among them for higher education, and especially for a medical career, which many have already taken up. To study in England is said to be the highest ambition of every Serbian student, male or female. Sir Willoughby Dickinson drew attention to the value of scholarships in drawing nations together and teaching people of various nationalities to know one another—factors of the greatest importance in the future peace of the world. Mr. Gavrilovitch, the Serbo-Croat-Slovene Minister, supported the scheme and proposed a vote of thanks to Lady Swaythling for holding and presiding at the meeting.

THE centenary of the death of Keats was celebrated at Hampstead by a pilgrimage to various places more or less directly associated with his residence there, and in Rome by a visit to the English cemetery. Keats took the diploma of Licentiate of the Society of Apothecaries on July 25th, 1816. There hang in the Court Room of the Apothecaries' Hall his portrait, and an original abstract from the candidates' entry book giving particulars of his apprenticeship, attendance at lectures, and hospital practice. Keats was a student at Guy's Hospital, and for part of the period that he was attending there lived in lodgings at Bird-in-Hand Court, Cheapside.

LORD MILNER'S Fund for the London School of Tropical Medicine now amounts to £117,000. The school obtained its new buildings, including a hospital, in Endsleigh Gardens, by means of a gift of £100,000 from the Red Cross Society. Lord Milner's Fund, which it is hoped will reach £150,000, is to provide for the maintenance of the school and for research. It was in 1899 that Lord Milner's great predecessor as Colonial Secretary, the late Mr. Joseph Chamberlain, made his appeal to the public for a capital sum to establish the school.

WE regret to announce the death, in his 92nd year, of Sir Charles A. Cameron, M.D., who for many years had been chief medical officer of health and public analyst for the city of Dublin.

Medical Notes in Parliament.

Dangerous Drugs Regulations.

MR. CLOUGH asked the Home Secretary, on February 24th, what was the result of the submission of the preliminary draft of the Regulations under the Dangerous Drugs Act by the Home Office to the Pharmaceutical Society of Great Britain, the Pharmaceutical Society of Ireland, the General Medical Council, the Royal College of Physicians, and the Royal College of Surgeons; whether, prior to the publication of the draft Regulations by the Home Office any, and if so which, of those bodies had indicated their approval of the draft; and whether any, and if so which, had submitted objections. Mr. Shortt said the result of the communication of the preliminary draft in November last to the bodies mentioned for their observations was as follows: The Royal College of Physicians and the Royal College of Surgeons considered the draft satisfactory and offered no observations, except that the Royal College of Physicians thought the minimum limit in the case of cocaine (which is fixed by the Act and cannot be altered by Regulation) too high. The General Medical Council also approved the Regulations, but asked that the directors of research laboratories might be included among the classes of persons who are authorized by the Regulations themselves to be in possession of the drugs. The Pharmaceutical Society of Great Britain replied by a letter maintaining that the proposal in the Regulations to prohibit the sale of the drugs to the public except on a medical prescription was *ultra vires* of the Act, and proposing that before going on with the Regulations the Government should appoint a Committee to consider the desirability of separating the functions of prescribing and dispensing. The reply of the Pharmaceutical Society of Ireland, which was not received till after the draft had been published, submitted objections on various points.

Indian Medical Service.—Mr. Gwynne asked, on February 23rd, whether the Secretary for India was aware that the Indian Medical Service had received neither the benefits of the accelerated cadre promotion granted in the British Army and the Royal Army Medical Corps nor the accelerated time promotion granted in the Indian Army; whether the reason given for the exclusion of the Indian Medical Service from the British Army and Royal Army Medical Corps cadre acceleration to lieutenant-colonelcy was because the Indian Army did not have it, and from the Indian Army time scale acceleration to field rank because the Royal Army Medical Corps did not have it. Mr. Montagu said that he found some difficulty in understanding the question, and asked for particulars of any specific case on which it was based. He offered assurance that there had been no discrimination against the Indian Medical Service.

The Spahlinger Treatment for Consumption.—Asked by Mr. Lynn, on February 23rd, for information regarding the Spahlinger treatment for consumption, Dr. Addison said he had made full inquiries regarding this supposed remedy for tuberculosis, but it was clear that much further investigation and experience would be necessary before accepting the claims made for it. It appeared that as long ago as 1913–14 the serum in question was prepared. It was tried by several hospital physicians, but there was not yet sufficient evidence of its therapeutic value, nor had the trials been sufficiently extensive to justify any definite and reliable conclusions. He understood that a supply of serum was not likely to be available for some months, and that on account of the secrecy maintained as to its constitution and method of preparation, it had hitherto been found impossible for the recognized research laboratories in this country to investigate its effects.

Industrial Fatigue Research Board.—Captain Elliot asked, on February 24th, whether the Treasury had ordered the Industrial Fatigue Research Board to be wound up by March; whether this body had recently issued a most valuable report on conditions in the steel making industry, indicating methods for securing greater efficiency in production; and whether it was the case that the dissolution of this body now would mean the loss of all the work and money spent in getting it to the present point, when it was beginning to show a return. Dr. Addison replied that the matter was under consideration, and he hoped soon to be able to give a definite reply. The Government entirely shared his views as to the report in question.

Salaries at the Ministry of Health.—Sir T. Polson asked the Chancellor of the Exchequer, on February 23rd, whether the salary of the First Secretary of the Ministry of Health had recently been increased from £2,000 to £3,000 per annum, and that of the Second Secretary from £1,700 to £2,000, and on what grounds these increases had been made. Mr. Chamberlain replied that the salary of the First Secretary to the Ministry of Health had been increased from £2,000, *plus* £750 bonus, to £3,000, *plus* £500 bonus, and that of the Second Secretary from £1,700, *plus* £750 bonus, to £2,200, *plus* £500 bonus, in pursuance of the recommendation of a committee appointed by the Government to advise them as to the emoluments which should attach to the principal permanent posts in the Civil Service. Mr. Asquith had acted as Chairman of the Committee.

Medical Records.—Sir Douglas Hall asked, on February 24th, whether the earlier system of record cards of insured patients proved to be useless and were practically unexamined, large quantities of cards being sold as waste paper, and whether Dr. Addison anticipated a better fate for the new cards. Dr. Addison replied that the cards under the earlier system of record were by no means useless; they were sold only after having served their purpose; but their value for clinical purposes was gravely impaired because at the end of every year they were surrendered and the particulars as to the names of the patients and their illnesses separated. It was because of this inherent defect in the old cards that the new records had been designed by a committee mainly composed of members of the medical profession, who gave fuller place—and in his view rightly so—to the clinical objects of the record, and so designed the form which might serve as a continued record of insured persons' illnesses. These records would undoubtedly be of great value, and the keeping of them would give less work than the old records. Sir D. Hall asked what was the position of a panel doctor who made an inaccurate statement regarding the diagnosis of a disease on the new record of an insured patient, whereby the patient was subsequently damnified; and whether, if the panel doctor was liable in such cases to pay damages, provision would be made to indemnify him in respect of an error in a document which he was compelled to compile under conditions which often rendered accuracy difficult or impossible. Dr. Addison said he did not understand what particular contingency Sir D. Hall had in mind, but he was advised that, in the absence of negligence on the part of the doctor, no liability for damages could arise in this connexion. Dr. McDonald had previously asked, on February 23rd, if, in order to obtain true health statistics for the nation, Dr. Addison purposed ultimately issuing record cards to the whole population, and not, as at present foreshadowed, limiting the issue to insured persons. Dr. Addison replied that he did not think it was practicable to give effect to the suggestion.

Insurance Doctors' Duties.—Mr. R. Young asked, on February 23rd, whether the attention of Dr. Addison had been drawn to the case at Old Street Police Court, where it was elicited that a panel patient had to pay 2s. 6d. for each visit she made to the doctor because she could not afford to leave her work to attend at the surgery during the hours fixed for panel patients. Dr. Addison said his attention had been called to the case, which, he learned, was under investigation by the London Insurance Committee.

National Insurance Contributions.—In answer to Mr. W. Thorne, Dr. Addison said, on February 28th, that an allowance for four weeks' unemployment and any weeks of sickness in each year was already made before an insured person was subject to any reduction of benefits for arrears under National Insurance; if the arrears exceeded this allowance, an opportunity was given to the insured person to make a comparatively trifling payment between July and November of each year in order to avoid any reduction of benefit. In these circumstances, Dr. Addison did not think it necessary to make any exceptional arrangements to meet the present distress.

Prison Medical Officers.—In answer to Mr. Sitch, on February 23rd, Mr. Shortt said there were thirty-one part-time medical officers employed at the following prisons: Bedford, Bristol, Canterbury, Cardiff, Carlisle, Carmarthen, Carnarvon, Dorchester, Durham, Exeter, Gloucester, Hull, Ipswich, Leicester, Lincoln, Maidstone, Newcastle, Northallerton, Northampton, Norwich, Nottingham, Oxford, Plymouth, Portsmouth, Preston, Shepton Mallet, Shrewsbury, Swansea, Usk, Winchester, and Worcester.

Disability Pensions.—Mr. Macpherson, replying to Mr. T. A. Lewis on February 23rd, said he was not prepared to accept the suggestion that any man who, entering the army in sound health, was discharged with impaired health would have his invalidity automatically attributed to military service. Each case was considered on its merits in the light of all available evidence; and if a claim for pension was rejected by the Pensions Ministry on the ground that the disability was not due to service, the man had a right of appeal to an independent tribunal.

Farmers and the Dangerous Drugs Act.—Mr. Shortt, in answer to Lieut.-Colonel Guinness, stated, on February 28th, that he proposed to insert words in the Regulations expressly authorizing the supply of drugs for the purpose of the treatment of animals on the prescription of a veterinary surgeon. Further details as to the application of the Regulations to agriculture were under consideration in consultation with the representatives of the agricultural interest.

Tuberculous Ex-Service Men.—Dr. McDonald asked, on February 24th, if the Minister of Pensions would reconsider his attitude towards ex-service men who had been certified as suffering from tuberculosis shortly after their discharge from the army, on account of being unfit for further military service, and now considered ineligible for pension; whether he was aware that, while the health of some men was improved by service, the health of others had deteriorated, the way to tuberculosis being thus paved, and whether cases of this sort would be dealt with more sympathetically notwithstanding the decision of any medical board examining these men months after their discharge. Mr. Macpherson replied that he was not aware that claims to pension on the ground of tuberculosis were unsympathetically considered. If the tuberculosis developed within a short period of discharge the disablement was generally admitted to be either attributable to or aggravated by service, and even where the disease did not develop until after a considerable period, the circumstances of the man's military service and of its effect on his health were carefully examined. If the Ministry were unable to accept his claim the man was advised of his right to appeal to an independent tribunal.

Delay in Appeal Tribunals.—Lieut.-Colonel Sir F. Hall asked a question, on February 24th, as to delay in hearing cases before the appeal tribunals, particularly in the London region. Mr. Macpherson replied that two extra courts were now sitting, and that two more would begin sitting on February 28th. The question of further increasing these courts was now under consideration by the Lord Chancellor. He had no control over the appeal tribunal, but would approach the Lord Chancellor to see whether more courts could not be provided, as there was reason to fear that there might be an increase next month in the number of cases awaiting hearing.

The Dentists Bill.—Dr. Addison stated, on February 28th, that he was not in a position to name any particular date for the introduction of the Dentists Bill, but if there were a general desire in the House that the bill should be introduced without delay, and if it would be treated substantially as an agreed bill, the Government would be prepared to introduce it in another place at an early date.

Sinking of Hospital Ships.—The Attorney-General, in reply to Mr. Bottomley and to Sir F. Hall, stated that the list of the names of forty-five Germans accused under Article 228 of the Treaty of Peace with Germany was handed on May 7th, 1920, to the German Government. To this list the British Government contributed the following seven names: Lieutenant Commander Patzig, charged with having sunk without warning the hospital ship *Llandovery Castle*, and with having afterwards fired on and sunk the boats containing the survivors, with a consequent loss of 234 lives; Lieutenant Commander Neumann, charged with having torpedoed without warning the British hospital ship *Dover Castle* when homeward bound from the Eastern Mediterranean fully laden with sick and wounded, with a loss of six lives; Lieutenant Commander Werner, charged with having sunk the British ss. *Torrington*, and with having subsequently drowned the whole of the crew, with the exception of the master, by submerging them while they were on the deck of the submarine; and Neumann, Trienke, Müller, and Heinz, charged with acts of cruelty to prisoners of war at various prison camps in Germany. After recounting earlier steps taken, Sir Gordon Hewart said that on November 26th, 1920, a printed volume containing the complete evidence in the cases in which these persons were concerned was delivered to the German Ambassador for transmission to the Attorney-General at Leipzig. Up to the present the Government had not received information that any one of the selected cases had been brought to trial. Various technical difficulties had been raised by the German authorities, but it was in direct conflict with the facts to state, as had recently been stated, that some of the cases had been settled by agreement or otherwise. It was the intention of the British Government to enforce the trial of these criminals if they were not dealt with by the Leipzig court. Until the end of last year it was impossible to say that there had been unreasonable delay.

England and Wales.

The Epidemic of Infectious Fever Cases in the Autumn of 1920.

A REPORT has been issued by the Infectious Hospitals Committee of the Metropolitan Asylums Board relative to the manner in which the autumn epidemic of infectious fever cases was dealt with. That epidemic was, from the point of view of the numbers concerned, the biggest epidemic with which the Metropolitan Asylums Board has had to deal in its history. During the epidemic of 1919–1920 it was not found possible to receive all the cases of infectious diseases for whose admission application was made, owing to the curtailment of the fever hospital accommodation during the war to meet urgent national needs. Yet only a few months later a task vastly greater in magnitude was actually accomplished with complete success, under conditions from which the war embarassments had been largely, though not entirely, removed. In the epidemic of 1920, from the beginning of July, when the rise began, to the end of the year, when, although numbers were declining, cases were still being admitted in large numbers, the total number of cases was 23,179, as compared with 19,761 in 1907, which was the previous highest total for the same period. Cases of diphtheria numbered 7,198 in 1920 as compared with 4,145 in 1907. In view of the great difficulty experienced during the previous autumn and winter in securing the nursing staff required, an extensive and systematic advertisement campaign was instituted throughout the country, and some 860 nurses were engaged by the matrons of the different hospitals. Even this number did not satisfy the needs, and it was found necessary to employ nurses from nursing institutes to the number of 197, while at times the staff had to work overtime so that a larger number of patients could be accommodated at the various hospitals. With a view to utilizing the large resources of Joyce Green Hospital, Dartford, in the early stages of the epidemic, arrangements were made in September under which on several days in the week a number of acute scarlet-fever cases were removed from their homes to Rotherhithe, and conveyed to Long Reach by one of the Board's hospital steamers, which on its return brought back recovered patients to Rotherhithe, whence they were taken to the usual ambulance stations for discharge. When, owing to extreme pressure, it was doubtful if the beds could be provided for all cases on immediate application, special efforts were made to admit every diphtheria patient at once; these efforts were entirely successful, except on three occasions, when one or two cases were held over from one evening to the following morning. The vast majority of the scarlet-fever cases throughout the epidemic were likewise removed at once, and no case which the Board was asked to receive was refused admission. It will be realized that the unprecedented demands in connexion with this fever epidemic placed a severe strain on the administration of the hospitals and the ambulance services, and the Metropolitan Asylums Board has very rightly conveyed to the medical superintendents, matrons, and other members of the staffs an appreciation of their services.

District Nursing in London.

The change in the economic conditions of the country brought about by the after-effects of the war has caused special attention to be given to the provision of nurses for a class of patients who do not usually seek the services of district nurses. The difficulties in the way of such patients obtaining private nurses arise from various causes. In some cases lack of accommodation makes it impossible to house a resident nurse, and this is found increasingly to be the case in flats. In other cases the economic problem is the chief one, for many patients of the professional classes are unable now to afford the ordinary fees of a private nurse. The annual report of the Central Council for District Nursing in London for the year 1920 states that efforts to meet these classes of case have so far been sporadic and unorganized. In London certain members of the Nurses' Co-operative Association have undertaken the cases of people living in flats and able to pay full fees, but unable to house a nurse; but it appears that such facilities either do not exist in sufficient number or, if they

exist, are not sufficiently known. Some district nursing associations, especially in the provinces, have endeavoured to meet this need, and most of them agree to allow their nurses to visit patients who can make some small payment, usually in the form of a donation. In London this plan has not been largely followed, though several of the associations are now considering the propriety of doing so. It appears clear that services rendered by district nursing associations should be limited to those who cannot pay the fees necessary to put the scheme on a profit-earning basis. A memorandum on the subject has therefore been issued by the Central Council to the Nurses' Co-operative Association and to the District Nursing Associations. The opportunities and the interests offered by district work are necessarily limited in their appeal to nurses, since with that work must also go considerable hardships, needing devotion and self-denial. The District Nursing Associations, while demanding the highest qualifications for their nurses, are unable to offer very attractive salaries; the minimum salary payable to district nurses by associations in receipt of grants has been increased from £50 to £63 over and above board and lodging; and this matter will probably have to be reconsidered in the near future. Even the full three years' training in a general hospital is not considered sufficient to fit a nurse for work calling for resources so varied as that of a district nurse, carried on, as it is, in conditions so different from those prevailing in a hospital, and often needing considerable knowledge of social work in all its many forms as well as practical skill. The district nurse has a share in all the health work of a district, including infant welfare and tuberculosis. Even with the increased grants made possible during last year, several of the associations are finding it necessary to curtail their work and to withdraw nurses. In view of the fact that every effort is being made to cover the districts unprovided with nurses, it is regrettable that such curtailment should be necessary, and a suitable appeal to the public will shortly be put forward in order that the voluntary associations may be adequately maintained. The annual meeting of the Central Council for District Nursing in London was held at the offices of the Metropolitan Asylums Board on February 28th, when it was decided that the executive committee should inquire as to the adequacy and efficiency of the provision of district nursing in the County of London, with a view to systematizing and improving the arrangements, and the desirability of extending the work beyond the area of the county. A report on the subject will be made to the Central Council.

Scotland.

ROYAL MEDICAL SOCIETY.

THE annual dinner of the Royal Medical Society, the first dinner of the Society since the war, was held in the Hall of the Royal College of Surgeons, Edinburgh, and was attended by a large and distinguished assembly. Dr. J. Davidson, senior president of the Society, was in the chair, and the guest of the evening was Professor Robert Muir, M.D., F.R.C.P., of Glasgow University, an old member of the Society. The toast of "The Imperial Forces" was proposed by the Lord Provost of Edinburgh and replied to by Admiral Sir Herbert Heath and General Sir Francis Davies. The toast of "The Guest" was proposed by the Chairman, and Professor Robert Muir, in reply, thanked the Society for having honoured him. Professor Muir then proposed the health of "The Royal Medical Society," giving reminiscences of his student days as a member of the Society. He sketched the history of the Royal Medical Society from its foundation in 1737, pointing out that even at an early period it came to regard itself as an essential part of the medical school, not of the University, nor of the Royal Colleges of Surgeons or Physicians, but of the Edinburgh Medical School as a whole. It had had considerable influence in making old quarrels disappear and in the development of the feeling that the medical school was a common cause. Dr. J. Lewis Owen replied to the toast. Dr. J. M. Watt proposed the toast of "The University and Royal Colleges," responded to by Principal Sir Alfred Ewing, Sir Robert Philip, Dr. George Mackay, and Dr. Freeland Fergus of Glasgow. Dr. J. F. C. Haslam proposed the toast of "Sister Professions," to which the Rev. Dr. Wallace Williamson and the Solicitor-General for Scotland replied.

GLASGOW MATERNITY HOSPITAL.

A serious position is facing the Glasgow Royal Maternity Hospital, and at the annual meeting on February 25th the main topic of discussion was the financial embarrassment of the past year. In the course of 1920 the state of indebtedness of the hospital to the bank reached a point which compelled the directors to consider the serious question as to whether the hospital should not be closed. The directors put the position before the Board of Health for Scotland, and a conference was held at which representatives from the hospital, the local authority, and the university attended. It was subsequently decided that the ante-natal wards and dispensaries should be closed on January 31st, 1921. A payment of £5,000 to account of the cost of the treatment of indoor ante-natal cases made by the local authority on January 27th enabled the directors to suspend their resolution to close these wards and dispensaries for the time being, but that relief is only temporary.

Ireland.

CENTRAL MIDWIVES BOARD FOR IRELAND.

THE Central Midwives Board for Ireland held a meeting at the office of the Ministry of Health, 33, St. Stephen's Green, Dublin, on February 24th. There were present Sir E. Coey Bigger (in the chair), Sir A. J. Horne, Sir W. J. Smyly, Dr. Charles G. Lowry, Miss J. H. Kelly, Miss Michie, Professor Corby. The Chairman referred in feeling terms to the death since their last meeting of one of their members, Alderman J. C. McWalter, M.D. He proposed a resolution expressing the sense of the loss which the Board has sustained, and conveying to Mrs. McWalter and family the Board's deep sympathy with them in their sad bereavement. The resolution was unanimously adopted.

The secretary reported that at the examination held in Dublin, Belfast, and Cork simultaneously on February 8th and 9th, 68 candidates presented themselves, of whom 61 passed and were granted certificates. The total number on the Midwives Roll of Ireland is now 2,902. A special meeting of the Board was subsequently held to consider the following charges preferred against one of the midwives on the roll: (1) That, being in attendance at a confinement, she failed to take the necessary steps to secure the attendance of a registered medical practitioner, the case being one which required such attendance. (2) That she failed to hand to the husband or nearest relative the form for sending for medical assistance. (3) That she failed to keep any record of the pulse or to keep a correct record of the temperature of the patient at each visit. The Board, after hearing the evidence in support of the charges, and considering a statement furnished by the accused, decided that her name should be removed from the Midwives Roll.

Correspondence.

THE COLLECTIVE OPINION OF THE PROFESSION.

SIR,—In the SUPPLEMENT, February 19th, page 42, appears a Memorandum advising the profession that, on the direct request of the Minister of Health, dated November 26th, 1920, the British Medical Association is endeavouring to form a committee of medical practitioners which shall be able to state that it voices the collective opinion of our profession centrally.

This Memorandum is admirable, in that it clears away once for all a great amount of mist and doubt often deliberately brought about by enemies of our profession. If the Minister, as Dr. Gordon Ward more than suggests, has stated to any other medical body that, unless it is called into collaboration in this matter by the Association, he will not recognize the resultant committee, such communication should be published at once and be dealt with. It

is not an action of interference and prejudging the issue which those acquainted with the present Minister would credit him with.

This opportunity offered by the Minister to the profession, both for its union and through that union for the benefit of the community at large, is so immense that it is profoundly to be hoped that, through jealousies or otherwise, it will not let it slip away and once more show to the world that it is an impossible crowd of individualists—incapable of give-and-take, with no imagination—which can well be ignored.

Now the body ultimately formed should be such as will fulfil at least these conditions:

1. The Minister of Health, whoever he may be, must be absolutely satisfied that the body is supported by a great majority of the members of the medical profession in active practice, and that in refusing to recognize any other groupings he is not thereby depriving any of their opportunities for being heard.
2. The proposed body itself must be satisfied that every practitioner in active practice has been given an opportunity of expressing an opinion on its constitution and mandate, and in consequence has been allowed his (or her) due weight in its formation.
3. Every such registered medical practitioner should have had a similar opportunity of satisfying himself.
4. The enemies of the profession within its ranks (whether a society or individuals) must once for all have been deprived of all evidence in support of a possible contention that the majority of the members of the profession in active practice are not supporting such a body.
5. The proposed body must be able to show irrefutably that after negotiating with the Minister it is able to "deliver the goods."

If these conditions are generally approved then it would seem to follow that recognition has been obtained for the necessity of consulting all the members of the medical profession in practice within the United Kingdom, if the proposed body is to receive from the commencement that cordial recognition and support without which it cannot satisfactorily fulfil its aims and objects. For this purpose, therefore, one would advocate that there should be issued promptly, to every such practitioner, with a copy of the memorandum as it appears in the SUPPLEMENT, a questionnaire containing certain principles suggested by this memorandum. The inquiries would seem to be—

A. Are you at present in active practice in the medical profession?

B. Do you approve generally of the memorandum sent you herewith?

C. Do you consider that the proposed medical body

(1) Should represent the views of the medical profession and the medical profession alone?

(2) Should be an immediately and directly responsible body recognizing the authority of its constituents and no other authority?

(3) Should, in its formation, be confined to those constituents directly and intimately concerned in medical politics and trained in expressing opinions on such matters?

(4) Should not profess to promote the interests of the community rather than those of the medical practitioners engaged in active practice?

D. Do you approve of the proposed body being formed of representatives of

The Royal College of Physicians of London.
The Royal College of Surgeons of England.
The British Medical Association.
The Society of Medical Officers of Health.
The Medical Women's Federation.
The Poor Law Medical Officers' Association.
The Medico-Pyschological Association.
The Association of Certifying Factory Surgeons.

E. If not, what other medical bodies *intimately concerned in medical politics* should be asked to become associated with those mentioned in D above?

F. Do you consider that it would be sufficient if this body (formed as in D above) should recognize other medical bodies *concerned in medical politics* by consultation and co-operation when necessary and desirable?

Looking at these questions, the only comments one would venture to make at this juncture are: (*a*) That if an affirmative majority reply is received to query C (1), it rules out of court the Federation of Medical and Allied Societies, which is a body with a preponderating number of represented lay persons. (*b*) That if an affirmative majority reply is received to query C (3), it rules out of court the Royal Society of Medicine and other numerous scientific medical and dental societies which have no acquaintance with medical politics and are attached to the Federation of Medical and Allied Societies. (*c*) That those who considered that the list given in query D should be extended have the opportunity offered by propaganda to obtain their wishes by securing replies to query E.

If the profession replied in the affirmative to queries C (1), C (2), C (3), C (4), and added the Medico-Political Union and the National Medical Union when replying to query E, one would have great hopes for the future. (That the societies referred to in query D should not co-operate would be a calamity.) Both these additional bodies, like the British Medical Association, have refused to have anything to do with joining the Federation, and sweet reasonableness now on all sides might be expected to result in future useful co-operation between them and the Association.

Might it therefore be urged that all medical societies concerned in medical politics, all Local Medical and Panel Committees, and all Branch Councils and Division executive committees, as well as individuals, should at once consider this memorandum, and demand of the Association as a first step that every registered medical practitioner now engaged in active practice be given an opportunity of expressing an opinion on the questions at issue, not delaying until it is found to be too late to make their voices effectively heard. In the meanwhile, would the committee of the Council which has the matter in hand refrain from taking any action which might jeopardize the position?—I am, etc.,

Hove, Feb. 26th. E. ROWLAND FOTHERGILL.

SOUTH AFRICA AND THE BRITISH MEDICAL ASSOCIATION.

SIR,—On a recent visit to South Africa, just following Dr. Macdonald's most successful tour, I was much impressed by the high spirit of loyalty displayed by the profession there to the British Medical Association, and by the strong desire expressed, even by the Dutch members, that a closer union, if that were possible, should exist between the South African Branches and the Home Association.

The local disruption in the Transvaal is, in the opinion of those most competent to judge, confined to a small area, consists of a few malcontents, is only temporary in character, and will, in all probability, soon fizzle out—the action of the recent Medical Congress to defer a decision for another year giving the movement time to expire gracefully.

The Association in South Africa is very much alive, and, while determined upon obtaining greater powers of self-government, it remains loyal to the parent Association.

The reception given to the Association's representative, Dr. Macdonald, was great, and must have been gratifying alike to him and the Council. If the Association desires to retain the Colonial Branches by their loyalty, then the policy of sending out representatives from time to time must be the future policy of the Association, and thus we shall establish an Empire Medical Association, whose Branches will be found wherever the dear old flag flies.—I am, etc.,

Fordingbridge, Feb. 28th. T. DUNCAN GREENLEES.

ENDEMICITY OF INTESTINAL PROTOZOA.

SIR,—May I be allowed a few words with reference to your interesting leading article of February 19th upon the subject of the endemicity of human intestinal protozoa?

We have, broadly speaking, the fact that *Entamoeba histolytica* (restricting ourselves for the moment to this pathogenic form) gives rise in this country only very rarely to amoebic dysentery, whereas in many tropical and subtropical districts this disease is prevalent. In England, as in those countries, a certain proportion of the population is known to be infected with the parasite, occurring in the "carrier" phase. The question is, what is the explanation of the marked difference of behaviour of the parasite in the two cases?

I myself have for some time considered that the chief reason therefor may be found in a different "normal" intestinal flora in this country, for instance, from that common in countries where amoebic dysentery is of frequent occurrence. To give an example of what I mean. There is a well-known transient complaint, which was alluded to by our men as "gippy tummy," characterized by sickness and diarrhoea, to which many are liable on

first arriving in Egypt, however careful they may be as regards what is eaten and drunk. Such an attack is probably in consequence of some change in the intestinal bacteria, with resulting disturbance until the alimentary canal has become accustomed to this new factor. And it is well known how careful, in general, one must be to avoid gastro-intestinal disturbance on going to a tropical or subtropical country.

Now we know really very little concerning the extent to which some bacterial infection stands in relation with or helps to induce amoebic dysentery. I have previously emphasized (*Journal of the Royal Army Medical Corps*, vol. xxix, 1917, p. 299) that "for the amoeba to give rise to dysentery there must be some lesion or derangement of the bowel—at least, some non-normal condition—lowering its resistance and giving the amoeba its opportunity." And "precisely the same reasoning applies to the intestinal flagellates." I would suggest, therefore, that the primary factor which either lowers the resistance of the bowel, or enables the amoeba to take advantage of a lowered resistance—the result being an attack of amoebic dysentery—is some bacterial infection. Indeed, this suggestion, that a bacterial infection may produce amoebic dysentery in the case where a man is already infected with the amoeba, has been made by Thomson and Mackie (*Journal of the Royal Army Medical Corps*, vol. xxviii, 1917, p. 409).

I do not consider that the suggestions, either of a non-pathogenic strain of *E. histolytica* in this country or of acquired immunity on the part of the population, will account adequately for the difference above noted. In the first place, amoebic dysentery is now known to occur—if very rarely—in people who have never been out of Britain. And I think the following point is of considerable significance: Not only before the war were a certain number of people doubtless infected with what would be regarded as the pathogenic strain arriving regularly in this country, but during the war vast numbers of troops so infected arrived home. And there can be no doubt, further, that a certain number of people who had never been abroad—especially, for instance, recruits—came into contact with such "carriers" and became themselves infected from the carriers' cysts. Yet how many cases of amoebic dysentery have resulted from infection so acquired, not only during recent years, but through all the years since intercourse with the East became general? Very, very few, certainly. But compare, on the other hand, the difference as soon as our troops went East and came into contact with Indian or Egyptian native sources of infection.

The conclusion is forced upon us, I think, that there is some additional, as yet unknown, factor concerned, operating in countries where amoebic dysentery is prevalent, which is not usually operative in this country and others where amoebic dysentery is of rare occurrence. To some extent this factor may be perhaps climatic. But I think, in the main, it is quite likely to be the predisposing harmful influence exerted on the bowel by some bacterial infection to which dwellers in this country are not normally or to nearly the same extent exposed as are those in districts where amoebic dysentery happens to be endemic. It is perhaps not without significance that amoebic dysentery does occur, apparently to a slight extent, among patients in lunatic asylums, where bacillary dysentery is far from uncommon, and where the general bacterial condition and resistance of the bowel may be, for some reason, not what we in this country are accustomed to regard as normal. Again, it may be suggested that "ulcerative colitis," of bacterial origin, may be the cause of the appearance of symptoms of amoebic dysentery in patients who are "carriers" of this amoeba.—I am, etc.,

The Lister Institute, Feb. 22nd. H. M. WOODCOCK.

SIR,—Mr. Clifford Dobell's report on the intestinal protozoa endemic in Britain and your editorial comments on the same (p. 276) have interested me, as I have recently examined for protozoa the faeces of 120 children admitted consecutively to one ward of this hospital. In this series *Lamblia intestinalis* was present in seven cases, of whom the youngest was only three months old. Of these children four were admitted for diarrhoea. In one case this symptom had recurred at intervals for six years, and had led to a slight degree of impairment of growth. To what extent this flagellate can be held to be responsible for the diarrhoea in these children it is at present impossible to say, but it appeared to be the only factor in the production of this symptom in the protracted case mentioned, for careful clinical and pathological observations excluded as far as possible all other causes of diarrhoea.—I am, etc.,

HERBERT PERKINS,
Pathologist, Paddington Green Children's Hospital, W.

February 22nd.

THE CURE OF HAEMORRHOIDS WITHOUT OPERATION.

SIR,—I am in cordial agreement with the main thesis of Dr. Lyth's article upon this subject in the JOURNAL of February 19th, that the operation for haemorrhoids is not always successful, is usually unnecessary, and is rarely justifiable. The late Sir James Goodhart wrote to the same effect in the *Practitioner* of December, 1914, and his article led to a series of others by various rectal and general surgeons, printed in the *Practitioner* of March, 1915. Stimulated by these articles, I tried various treatments for haemorrhoids at St. Mark's Hospital, where I was temporary assistant surgeon at that time, and in the *Lancet* of March 18th, 1916, I published a paper on the treatment of haemorrhoids by injection. Since 1914 I have been practising this method of treatment very extensively, and have every reason to be pleased with the results I have obtained.

Whilst agreeing with Dr. Lyth's opening text, I cannot at all agree with his description of the pathology and course of haemorrhoids. Let me at once correct him in his idea that when an internal pile has prolapsed it has become an external pile, in any other sense than that it is now outside the sphincter ani. Internal piles are attached to the mucous membrane of the rectum above the anal valves, and are always covered by mucous membrane and never by skin; they can always be reduced completely into the bowel, unless strangulated. They are essentially different from external haemorrhoids. External haemorrhoids are of two varieties:

(1) Thrombosed external haemorrhoids, which are inflamed thrombosed subcutaneous varicose veins, and appear as hemispherical, purplish lumps, covered with ordinary skin, and varying in size from that of a pea to that of a walnut. If left alone or treated "palliatively" they subside in two or three weeks, but meanwhile cause considerable pain and discomfort, and may suppurate and cause an anal fistula. They are best treated at once by snipping off about two-thirds of their bulk with scissors and forceps, and turning out the contained clot with a spoon. This little operation can be done painlessly under local anaesthesia, gives immediate relief, and leaves a wound which is usually soundly healed in a week.

(2) The other variety of external haemorrhoid is the ordinary "skin-tag," which is a pendulous fold of skin growing from the anal margin. Skin-tags as a rule give rise to no symptom other than slight itching, unless they become inflamed or infected, when they can be removed under a local anaesthetic.

Dr. Lyth boldly states that as long as an internal pile remains inside the anus it does little harm. But it is a daily experience of those who see many rectal cases to meet with patients who have piles which have never prolapsed, but who nevertheless have had such frequently repeated haemorrhage that they have been rendered extremely anaemic. I have twice been summoned to see patients who have had such alarming haemorrhage from piles that have never prolapsed that they have been rendered pulseless and almost at death's door. Other exceedingly common symptoms of piles which have never prolapsed are pruritus, pain, discharge of mucus, dyschezia, etc. Without a good rectal speculum (such as Kelly's proctoscope) a pile inside the anus cannot be diagnosed, except by guesswork, because even the largest internal haemorrhoids, if uncomplicated, cannot be felt even by the finger endowed with the most highly developed *tactus eruditus*. Even comparatively small internal haemorrhoids frequently cause quite severe haemorrhage and other troublesome symptoms.

Dr. Lyth's treatment by the frequent application of calamine powder and the constant application of a pad to the anus may have its uses, but I doubt whether it is likely to control haemorrhage from piles of any size, and it is obviously inapplicable to piles which are not prolapsed. On his own showing, if the piles are prolapsed, it will be some six weeks before spontaneous reduction can be achieved even by the patient's adoption of the recumbent posture after defaecation; and even then the patient is only

"in a fair way to being cured." Meanwhile, and even afterwards, he has to wear a pad, to powder his piles frequently, to ensure that his bowels only act at bedtime, and so on.

By means of injections about 90 per cent. of all cases of internal piles can be treated painlessly without operation, and without lying up a single day. In the very large majority of the cases I have treated—which amount to many hundreds—both bleeding and prolapse have disappeared from the moment of the first injection, and in all cases a permanent disappearance of the piles may be looked for after from three to six injections.

Method.

The piles are injected *in situ* through a Kelly's speculum by means of a suitable syringe. The syringe I recommend is a modification of Dawson's dental syringe, which is long enough to use through the speculum. It is stocked by Messrs. Krohne and Sesemann, Messrs. Allen and Hanburys, and others. The solution I use consists of 20 per cent. carbolic in equal parts of glycerin and water. About 5 minims of this solution is injected into each pile in such a way that the fluid is lodged near the centre of each pile. In the case of a very large pile a few more drops may be injected into its base. A few seconds after injection the pile swells considerably, and its surface turns white. The needle should be kept in position until these changes have been observed, because otherwise some oozing is likely to occur and the fluid will be washed out with the blood. All the piles may be injected at one sitting. Care must be taken to inject too little rather than too much of the solution, because if too much is used there will be a more violent reaction and considerable pain may result. If the correct amount and the right strength of solution is used, there is not usually any pain worth mentioning. The patient must be warned that in the unlikely event of his piles coming down after injection, he must not delay in washing them with cold water, greasing them with vaseline or any ointment, and gently returning them. If this is not done, and the piles happen to come down after injection, they may continue to swell outside the anus and become strangulated. Apart from this, no treatment other than a laxative is required. The injections are repeated at weekly intervals, until examination with the speculum shows no pile present.

I have recently written to all my private patients whom I treated by injections upwards of three years ago. Of those from whom I received answers to my questions I find that 83.4 per cent. report themselves absolutely free from all rectal symptoms. Of the remaining 16.6 per cent. by no means all have any real trouble, because I have included amongst them such cases as those in which the patients have "occasional itching about the anus," "occasional uneasiness," and so on. Amongst this 16.6 per cent., as well as amongst the 83.4 per cent. absolute successes, were several in which I did not advise injection at all, because I found complications which rendered operation the preferable treatment; however, I injected them at their own earnest request, and even in those who are not still well there was a long interval of complete comfort.

This treatment is so simple that any practitioner who will acquire the few necessary instruments and a certain amount of practice may adopt it. But before doing so he must have a clear idea of the difference between external and internal piles, because the method is quite unsuitable for the former and, if employed therein, might lead to very unpleasant results.

I fancy most patients would prefer this treatment, with its practically instantaneous relief, to the treatment suggested by Dr. Lyth, which takes six weeks of messy and tiresome applications to obtain even partial relief and, I venture to assert, almost certain recurrence sooner or later.

Obviously most patients will prefer it to operation, which involves two weeks at least in a nursing home, much expense, a general anaesthetic, and not negligible pain, and which, in my experience (of patients operated on by others as well as by myself), gives no better results as far as recurrence of symptoms is concerned.—I am, etc.,

London, W.C., Feb. 23rd. ARTHUR S. MORLEY, F.R.C.S.

SIR,—It is the duty of all good physicians in these days to protect their patients from the "tyranny" of the surgeon, and consequently the article by Dr. Lyth (February 19th, p. 265) on "the cure of piles without operation" will be of interest to many of us.

As one of those who are of opinion that surgery should be looked upon in many cases as a last resort only, I cannot agree with Dr. Lyth that that view should be pressed too far when dealing with that most painful of minor affections—haemorrhoids.

No class of case causing the prolonged suffering which is characteristic of inflamed piles responds so swiftly and with such triumphant success to the ministrations of the surgeon.

Meanwhile one is moved to sorrow, if not to a certain amount of unseemly hilarity, at the thought of Dr. Lyth struggling with a mass of acutely inflamed external piles which obstinately refuse to be returned to what he insists must be their proper home within the sphincter. I fear that such intervention could only result in unmerited suffering for the unfortunate patient and great satisfaction in the camp of the enemy who will be called in to repair the mischief.—I am, etc.,

Hove, Feb. 21st. A. H. COPEMAN, M.D.

RISKS AFTER OPERATIONS ON TONSILS AND ADENOIDS IN OUTDOOR CLINICS.

SIR,—I should like to suggest that the dangers and complications of the tonsil and adenoid operation when performed in the out-patient department are not so serious nor so numerous as the letters of previous correspondents might lead one to suppose.

At all the hospitals in London of necessity hundreds of these operations are performed each year, conferring great benefit on the patients. I am, of course, only able to quote figures from my own department, but no doubt statistics from other hospitals would show equally favourable results.

Through the kindness and energy of the London County Council "Assistant Organizer" at Guy's I am able to give the following statistics from all the London County Council school children operated on during the last three years in the out-patient department:

The total number of operations was 2,039; the following complications occurred:

Haemorrhage necessitating admission for two or three nights	2 cases
Haemorrhage after returning home for which a doctor was called in	1 case
Otorrhoea coming on within one week of operation...	2 cases
Otorrhoea coming on one month after operat on ... These cleared up in less than a fortnight.	1 case
Illness at home and a doctor called in	2 cases
Admitted to the hospital one week after operation on account of vomiting	1 case

In one case Vincent's angina developed in the tonsil bed, in two cases temporary torticollis followed operation, but it is most improbable that these can be ascribed to the fact of the patient's return home after operation.

Expressed in percentages: Haemorrhage occurred in 0.147 per cent., otorrhoea in 0.147 per cent.

Though I have no actual statistics, I can state that amongst some 8,000 operations performed in the out-patient department during the last ten years no death has occurred, though one case was only saved by cardiac massage; nor has there been any case of acute otitis media that progressed to acute mastoiditis.—I am, etc.,

London, W., Feb. 28th. W. M. MOLLISON.

THE IMMUNIZING EFFECT OF *X* RAYS IN CANCER.

SIR,—The correspondence with regard to *x* rays in the treatment of cancer which has appeared in your columns of late cannot fail to be of interest to the medical profession in general. Dr. Morton is the advocate of penetration and yet more penetration. The harder the ray, the greater the electronic disturbance within the tissues; this, of course, is true, and it is also true that if we seek to destroy a malignant growth by direct attack, *x* rays must reach it in large quantities. But neither quantity nor quality in themselves guarantee success. The gamma rays of radium may fail even in the case of readily accessible tumours, and this although a relatively enormous amount of this agent may have been available. Then the average hardness of the *x*-ray beam used in therapy has been doubled and trebled within the past ten years; yet will anyone assert that the prognosis of cancer in bone—even thin superficial bone—has been sensibly improved? The ideal of the *therapia sterilans magna* has never yet been reached in medicine. Ehrlich believed he had attained it, but there is now reason to think that salvarsan acts indirectly by stimulating the tissues, as well as by direct poisoning of the spirochaete. The *x* ray does not destroy cancer *in vivo*

wholly—probably not even chiefly—by an immediate destructive action upon the cancer cell, but by local and general stimulation of the protective mechanisms of the body. Laboratory investigations as to the effects of varying doses of *x* rays upon cancer masses *detached from their natural surroundings* cannot therefore be in any way relied on to forecast the results of similar doses applied to the living patient.

Experiments designed to raise or lower the immunity of an animal are, of course, in a different category. It has been shown at the Rockefeller Institute in America, and confirmed by Professor Sidney Russ and others in this country, that a single large dose diminishes resistance to cancerous invasion; whereas a series of carefully graduated small doses raises resistance to such an extent that it is almost impossible to get a cancer graft to "take." Whether the rays from a tube "backing up" a 16-inch gap are more effective as resistance-raising agents than those from a tube "backing up" only 10 inches remains to be proved.

The Erlangen procedure, whatever it does to the primary growth, must lower the general resistance, at any rate for a time, thus actually helping any existing metastasis to spread, and likewise any projection of the tumour which may have escaped irradiation. It also produces some skin reaction. The method must stand or fall by itself; it cannot safely be combined with operation. After such dosage he would be a bold man who would submit the skin and subjacent parts to surgical trauma; while as a post-operative procedure it is difficult to see how it can have any *raison d'être*.

Now the tendency at present, in this country, is to seek to combine *x*-ray treatment with surgery. That this can be successfully done, both before and after operation, can be testified by many, including myself. But the large single dose must be eschewed. Dr. Morton tells us that small doses stimulate a malignant growth. Perhaps a single small dose does; I have no experience. But it is certain that seven or eight comparatively small doses, from a Coolidge tube having a 10-inch spark gap, if spread over a period of about three weeks, will cause a palpable diminution in a carcinoma of the breast, and not in any way interfere with the surgeon's work. A 3-millimetre filter is used, the anti-cathode skin distance is one foot, and the patient is not shielded except as to the face. The current in the secondary is 1.5 milliampères and the time fifteen minutes.

The action I do not believe to be primarily a local one. In my opinion the treatment acts much as a course of vaccines—it raises the resistance of the patient to cancerous invasion, and places him in a favourable condition for the operation. As to post-operative treatment, the same idea is carried out. Courses of a dozen to eighteen sittings are given at intervals varying from three months to a year, the object being not to kill off any remaining cancer cells by the direct effect of the rays, but to put the body in a condition to combat their growth. That a series of small doses has this effect in animals was proved in the same set of experiments which showed the harmful effect upon the body resistance of large single doses. It will be noted that this system permits of actually shielding the growth itself from the *x* rays should this be considered desirable.

The results quoted by Dr. Reginald Morton as having been attained at the Erlangen clinic are not wholly convincing—as yet. The number of cases is small, and the observations extend for an average of about three years only. Taken at their face value, they are decidedly better than those obtainable by surgery alone, more especially as regards uterine cancer. Figures for cases treated by a combination of *x* rays and surgery, with pre- and post-operative raying, are not yet available to any great extent in this country, but there is no doubt but that they show an improvement on surgery alone.

It may be that, at no very distant date, uterine and breast cancer will be treated by *x* rays alone; but, even then, it does not follow that the Erlangen technique is the only one by which cures can be accomplished, or that there is no apparatus in Great Britain suitable for the purpose. It must be remembered that, so far, British radiologists have had practically no opportunities of finding out what can be accomplished entirely apart from operation, for the latter has been the rule.

British *x*-ray workers will, I am sure, hesitate long before adopting the heavy dosage advocated in Germany. They remember the skin disasters which were beginning to come to light just before the war as a result of big doses, although the skin had not at the time appeared to be injured; and if in the near future they are called upon to treat cancer apart from surgery, they are likely in the first place to try out less drastic procedures. To condemn the Erlangen technique would be foolish; it is a serious attempt to substitute *x*-ray irradiation for surgical operation in the treatment of cancer of the breast and uterus, and it may be successful; but, in the nature of things, the proof or disproof will occupy many years.

Meanwhile, any attempt to secure the wholesale adoption of the method in this country is to be deprecated. I have already had medical men writing to me to ask if I am sure my doses are big enough—if I am certain that I am not stimulating instead of depressing. Such is the effect of a single letter from a man of Dr. Morton's eminence.

Let us clearly understand that the Erlangen technique has not been designed for use in conjunction with surgery, whereas the attempt to "immunize" the patient by comparatively small doses is based on the results of animal experiments, makes surgical operation more easy, and is without risk of sudden catastrophe. So far it is justified by clinical results, and it is at least worth some years' systematic trial.

The use of *x* rays as immunizing agents in cancer was fully discussed by me in a paper in the BRITISH MEDICAL JOURNAL for June 12th, 1920. The immunity is not specific; it is effective in tubercle, Graves's disease, and other conditions. The conception of *x* rays as resistance-raising agents, rather than substitutes for local surgery, is likely to help much towards that close combination between surgeons and radiologists which is so greatly to be desired.—I am, etc.,

London, W., Feb. 14th. F. HERNAMAN-JOHNSON.

CONFERENCE OF STAFFS OF VOLUNTARY HOSPITALS.

SIR,—I observe that the Leicester motion, which I vainly attempted to oppose at the London Conference, and against which I protested strongly in a letter to the JOURNAL immediately afterwards (January 1st, 1921, p. 31), has been rejected by the Conference in Scotland in favour of one considerably more modest even than that which I put forward myself as an alternative. I trust that the Leicester motion may now be dropped altogether. Rarely indeed has a resolution so detrimental to the voluntary system been propounded, even by its worst enemies. Had the Representatives in London first discussed it with their own lay committees, and had the Chairman refrained from giving that very strong lead which he did, I am persuaded that the ill-considered motion of Leicester would have received in London the same reception that it has now deservedly encountered in Scotland.—I am, etc.,

Chichester, Feb. 27th. G. C. GARRATT.

THE POSITION OF ARMS IN BREECH WITH EXTENDED LEGS.

SIR,—The gain to obstetrics from Dr. Victor Bonney's letter of February 16th, in your issue of February 28th, will be specially recognized: it signifies careful clinical obstetrics; it marks the value of museum evidence which, to some of us, brings its daily lesson.

The paper by Dr. W. S. A. Griffith and the late Dr. Arnold W. W. Lea on breech presentation with extended legs, in the Obstetrical Society's *Transactions*, 1897, brought the best of clinical information.

Since that time I have collected relative museum material. Some of the material, the undisturbed foetus with extended legs at four and a half months within the intact amnion and chorion, and at seven months within the uterus, both confirm Dr. Victor Bonney's description of the extended arms, only partial however, and confined to the lower hemisphere of the head, amounting to this—that if the vertex presented the foot and the hand would be palpable at the periphery of the head.

Eight years ago, after discussing this fact with Sir Francis Champneys, I was supplied by him with the notes of one of his forceps deliveries in August, 1882, embodying these anatomical facts, which so often escape published description and, probably nearly as often, clinical observation. At that time it was my wish to

have the opportunity of displaying what is now well, if not widely, understood in teaching schools. Of late years the cost of illustration has been prohibitive.—I am, etc.,

HENRY BRIGGS,

Department of Obstetrics and Gynaecology, University of Liverpool, March 1st.

SIR,—As the medical man unsuccessfully sued for negligence whose experience Mr. Victor Bonney refers to in his letter (February 26th, p. 320) may I mention the following facts?

The case I had to conduct was one of delayed descent with the os dilated. Under chloroform I introduced my hand, and found a breech with fully extended legs (sacro-posterior breech not engaged). Passing my hand above the knee to flex and coax down the leg, I felt a displaced arm passing upward, and at once thought "if I leave that I shall get extended arm when the legs are born," so I followed the arm and found that hand lying flat on the parietal bone. Then I sought the other arm, and found it also displaced upward, elbow forward, forearm above ear, and hand under occiput; I first replaced both arms, then pulled down both legs, the child being large, turning axially at the same time, and delivered without difficulty, the arms coming out in the natural position as replaced.

I have always doubted the truth of the textbook teaching that extension of arms in a breech case can be caused in any way if the arms are in the natural folded position while *in utero*. I believe that in all cases of extended arms there must be some precedent unusual position of the arms; this belief makes it more, not less, important to verify the position of the arms as soon as the umbilicus appears in a breech case. It may mean we ought to verify their position still earlier in labour.

Having in this case lighted on some evidence in support of my belief, I wrote to seven eminent gynaecologists suggesting faulty position of arms *in utero* as the true and main cause of arm extension, and asking if they had ever had occasion to discover the position of the arms *in utero* in a case which subsequently showed extended arms.

One replied that he had sometimes found arms displaced much as I describe; none of them agreed with my theory, but none of them had a case in which, after examination had shown the arms in normal position, the arms subsequently became extended. I suppose they would say because they never pulled unduly, but I suggest that undue pulling will only be followed by extension of arms if the arms are so abnormally placed that extension would occur without undue pulling, or possibly if the pulling is so vigorous that it sets up a reflex causing the child to displace its arms *before* they reach the brim.

Mr. Bonney now suggests that in every case of extended legs the arms are abnormally placed. I recently had a case of a very small child born alive with ease and with extended legs unreduced (I was called late), in which the arms were normally placed. This does not affect the wisdom of Mr. Bonney's suggestion that in all cases of extended legs the position of the arms should be ascertained, and, if misplaced, replaced. The question in my mind is whether we ought not to go further, and ascertain arm position in every breech case which we see early enough to make so doing easy. I have never yet seen any trouble follow the introduction of my hand into the uterus, and children are lost from arm extension. I think it is debatable. Can any reader record a case of arm extension in a breech case in which he had previously proved the position of the arms to be normal, or subsequent extension in a case where he had replaced misplaced arms? I admit that negative evidence cannot prove my theory, but I maintain it until positive evidence disproves it. I suppose every experienced practitioner has seen cases of arm extension in which no unwise pulling was indulged in, and it is really time that the school theory that such pulling is the main cause of arm extension was given up.—I am, etc.,

Finchley, Feb. 25th. T. H. GODFREY.

THE DROOPING SHOULDER SIGN OF PHTHISIS.

SIR,—In my book, *Tuberculin in the Diagnosis and Treatment of Tuberculosis*, one reads on p. 72, line 16, these words: "This 'habitus phthisicus' manifests itself in the thin, weakly, weedy, long, lanky individual with stooping gait and *drooping shoulders*, a narrow flat chest, wide oblique intercostal spaces, moving but little (paralytic chest), and wing-like shoulder blades projecting outwards." Certainly Dr. Rivers has not read my book. Comment is unnecessary.—I am, etc.,

W. CAMAC WILKINSON, M.D.Lond., F.R.C.P.

London., Feb. 15th.

SIMPLE GOITRE IN SCHOOL CHILDREN.

SIR,—When examining school children in Hampshire I have been struck by the large number of cases of slight enlargement of the thyroid occurring in both boys and girls below the age of puberty. This condition would appear to be much more common in this country than is generally supposed. The thyroid as a rule is not conspicuous, and is seen only if specially looked for. The children are perfectly healthy and robust, but upon comparing their size and weight with those of other children of a similar age, it will be found that they are almost invariably below the average. The condition consequently is not easy to detect unless a number of children of the same age are being examined at once.

Such children are never brought to a doctor for treatment, as they are not ill. The parents frequently do not realize that the child is small for its age, or if so, it is put down as a family peculiarity. I have had no opportunity of treating such children, but should they come under medical treatment for some other condition, it would be well worth while putting them on a course of thyroid or iodide, as was done in the South of France, in the hope of improving their growth.—I am, etc.,

WILLIAM A. LETHEM, M.C., M.D., D.P.H.,
Assistant M.O.H. County of Hampshire.

Brockenhurst, Feb. 27th.

Obituary.

ERNEST COURTNEY LOMAS, C.B., D.S.O.,
Surgeon Captain R.N.

SURGEON CAPTAIN ERNEST COURTNEY LOMAS, R.N.(ret.), died at Pencaitland, East Lothian, on February 24th. He was born on December 24th, 1864, and educated at Owens College, Manchester; he graduated M.B. and Ch.B. of Victoria University in 1888, and took the M.R.C.S. in that year and the F.R.C.S. in 1907. After filling the posts of house-surgeon to the Manchester Royal Infirmary, of senior house-surgeon to the Royal Albert Edward Infirmary, Wigan, and of resident medical officer of the Barnes Convalescent Hospital, Cheadle, he entered the navy as surgeon in 1891. He was specially promoted to staff surgeon in 1900 for service in the South African war, became fleet surgeon in 1904, surgeon captain on September 11th, 1918, and retired in 1919. He served with the Naval Brigade in the South African war, taking part in the relief of Ladysmith, was mentioned in dispatches, and gained the Queen's medal with two clasps, a special promotion, and the D.S.O. During the recent war he was medical officer in charge of three hospital ships in succession. He contributed a description of the equipment and working of hospital ships to the special series of articles published in the BRITISH MEDICAL JOURNAL and afterwards collected in the volume *British Medicine in the War*.

Sir HUMPHRY ROLLESTON writes: Surgeon Captain E. C. Lomas's long and painful illness, by necessitating his retirement, was a severe blow to the Naval Medical Service, not only on account of his surgical and administrative abilities, but also for the loss of a specially attractive and lovable personality. He won the D.S.O. for the relief of Ladysmith in the South African war in 1900, and had a distinguished record in the service, his war work being recognized by the C.B. in 1916. He was senior medical officer of three hospital ships in succession; the *Maine* was wrecked off the coast of Scotland before the war, but he was not on board at the time on account of his wife's illness; the *Rohilla* was wrecked off the East Coast late in 1914, and Lomas suffered considerably from exposure before he would leave; the *Garth Castle* was a model and happy ship under his genial and tactful guidance. He subsequently organized and, in October, 1916, opened the Royal Naval Hospital at Granton, near Edinburgh, where I often saw him. Not only was he a most efficient organizer and, until administrative duties

absorbed his time; a keen and capable surgeon, but a most unselfish worker, never sparing himself, while looking after his subordinates in the most kindly way so that they were devoted to him. He was a gallant gentleman whom his friends, and they are many, will long regret.

DR. GEORGE GAUTBY, who died at his residence in Hull on February 18th, aged 57, was educated at Newcastle-upon-Tyne. He graduated M.B., B.S.Durh. in 1887, M.D. two years later, and became M.A. in 1909. He had practised in Hull for thirty years; he was Sheriff in 1908. He took great interest in the Free Church movement and in social affairs, and was a member of the Hull Division of the British Medical Association. He is survived by his widow and five children.

DR. THOMAS POWER, of Poplar, died at his residence there on February 16th. He was a student of Dr. Steevens's Hospital, Dublin, and took the diploma of L.R.C.P.Lond. in 1871. He settled in Poplar soon afterwards, and early won the respect of those among whom he worked. He was J.P. for the borough of Poplar, Public Vaccinator, and Medical Assessor to the Poplar Borough Council. The funeral took place at St. Patrick's Cemetery in the presence of a large number of mourners.

DR. ROBERT WM. GOLDIE died from valvular heart disease at Newbiggin-by-Sea, on February 23rd, in his 75th year. He was educated at Edinburgh University and Westminster Hospital, took the diplomas of L.R.C.P.Edin. and M.R.C.S.Eng. in 1868, and graduated M.D.Edin. in 1887. For twenty-two years he was medical superintendent of the Poplar and Stepney Sick Asylum.

DR. NUSSERVANJI FAKINJI SURVEYOR died of heart failure at Bombay on January 26th, aged 57. He was educated at Bombay University, where he graduated L.M.S. in 1890 and M.D. in 1892; then coming to England he took the M.R.C.P.Lond. in 1892 and the D.P.H.Camb. in 1893. In 1894 he was appointed physician to the Jamsetji Jijibhai Hospital, and at the time of his death was consulting physician to that hospital, and consulting bacteriologist to the Gokuedar Tejpal Hospital, the two chief Indian hospitals in Bombay. He had gained a considerable reputation as a bacteriologist by his researches on the subjects of plague and of madura foot or fungus foot.

Medical News.

PROFESSOR ROBERT BELLAMY CLIFTON, F.R.S., who died at Oxford in his 85th year on February 22nd, was an honorary member of the British Medical Association. He had held the chair of experimental philosophy at Oxford for fifty years (1865–1915). He was elected an honorary member of the Association on the occasion of the annual meeting at Oxford in 1868.

CLINICAL meetings are held at the Western Ophthalmic Hospital, London, N.W., at 5 p.m., on the fourth Wednesday of each month. Medical practitioners and others interested are invited to attend.

A DISCUSSION upon the eradication of tuberculosis in men and animals will be held in the Robert Barnes Hall of the Royal Society of Medicine on Monday, March 14th, at 5.30 p.m. The discussion will be opened by Sir John McFadyean, who will be followed by Sir Clifford Allbutt, Sir G. Sims Woodhead, Dr. Arthur Latham, Professor Hobday, Dr. A. C. Inman, Dr. Halliday Sutherland, Mr. Cyril Nitch, and others. The chair will be taken by the President of the Society, Sir John Bland-Sutton.

A COURSE for the D.P.H. (Conjoint Board in England) will be held at the Technical College, Bradford. The course in bacteriology will be conducted in the public health laboratories by Dr. William Campbell, lecturer in bacteriology and industrial diseases, and Dr. H. Cecil Robertson, assistant lecturer and demonstrator in serology and immunology. The course in chemistry will be under the direction of Dr. R. D. Abell, the head of the chemistry department.

FOR the last twenty years or so there has been some uncertainty as to the future of St. George's Hospital and its medical school; various proposals for their removal to some other site have from time to time been put forward, but we are now informed that this uncertainty has been set at rest. It has been decided that both hospital and school shall remain on their present site. The uncertainty has no doubt been to some extent detrimental to the school, but the teaching has never suffered, and the examination results for the past year have been most creditable. As the number of students recently has not been large, any candidate at all capable had a number of scholarships and prizes open to him, and was certain of getting a house appointment.

THE Medical Officers of Schools Association has convened a conference on "Punishments in the Schools," to be held on Friday, March 18th, at 4.30 p.m., in the Medical Society's rooms, 11, Chandos Street, W.1.

AT a meeting of the Royal Anthropological Institute, on March 8th, Professor F. G. Parsons, F.R.C.S., will read a paper on the head form of the long barrow race, with reference to the modern inhabitants of London, and on March 22nd Dr. F. G. Crookshank will read a paper on the significance of Mongolian imbecility. The meetings are held at 8.15 p.m. at the rooms of the institute, 50, Great Russell Street, W.C.1.

AT the January Matriculation Examination of the University of London there were 148 successful candidates in the first division and 864 in the second division.

THE late Mr. Robert Francis Samuels of Liverpool has left £1,500 in trust to the University of Liverpool for the foundation of three Samuels medical scholarships in medicine, surgery, and obstetrics respectively in memory of his two deceased brothers.

AT a meeting of the Central Council of the Combined Universities Conservative and Unionist Association, Mr. W. Barnard Faraday, LL.B., barrister, and graduate of Manchester University, and Dr. Sidney C. Lawrence, medical officer of health for Edmonton, and graduate of Birmingham University, were unanimously adopted as prospective candidates for the Combined English University constituency at the next general election.

THE second International Congress of Pathology has been indefinitely postponed, as it is felt that it is impossible to establish cordial relationships between the pathologists of all nations at present.

AT a meeting of the Committee of the Royal Surgical Aid Society on February 15th, Mr. Samuel Watson, who has just retired from the offices of treasurer and chairman of committee, was presented with an illuminated address recognizing his valuable services during the past fifty-one years.

A COMMITTEE has been organized, under the presidency of Professor Luigi Zoja, to commemorate Carlo Forlanini, who died in 1918, by establishing a foundation for the study of tuberculosis. Subscriptions should be sent to Professor Ambrogio Da Gradi, Clinica Medica, Pavia.

THE annual congress of the Ophthalmological Society of the United Kingdom, with Mr. J. Herbert Fisher as president, will be held on May 5th, 6th, and 7th at the Royal Society of Medicine, Wimpole Street. The following arrangements have been made: On May 5th, in the morning, the President will deliver his opening address, and Mr. Maitland Ramsay will read a paper on "A case of cyclitis associated with swelling of the parotid glands"; and in the afternoon there will be a discussion on "The psychology of vision in health and disease," opened by Professor C. Spearman and Sir F. W. Mott. At 5 p.m the Bowman Lecture will be given by Mr. E. Treacher Collins on "Changes in the visual organs correlated with the adoption of arboreal life and the assumption of the erect posture"; and in the evening the members will dine together. On May 6th, in the morning, there will be a discussion on "The treatment of manifest concomitant strabismus," opened by Mr. C. Worth and Mr. A. J. Ballantyne. In the afternoon the members will visit St. Thomas's Hospital, where a clinical meeting will be held, at which members are invited to show cases of interest. In the evening a number of papers will be read, including one by Lieut.-Colonel H. Herbert on "Results of the iris-prolapse operation for glaucoma." On the morning of May 7th there will be a business meeting, and further papers will be read. During the congress the optophone will be demonstrated in the Bowman Library. Members desirous of reading papers, showing cases, or taking part in the discussions are requested to communicate as soon as possible with Mr. F. A. Juler, 14, Portland Place, London, W.1.

Letters, Notes, and Answers.

As, owing to printing difficulties, the JOURNAL *must be sent to press earlier than hitherto, it is essential that communications intended for the current issue should be received by the first post on Tuesday, and lengthy documents on Monday.*

ORIGINAL ARTICLES and LETTERS *forwarded for publication are understood to be offered to the* BRITISH MEDICAL JOURNAL *alone unless the contrary be stated.*

CORRESPONDENTS who wish notice to be taken of their communications should authenticate them with their names—of course not necessarily for publication.

AUTHORS desiring reprints of their articles published in the BRITISH MEDICAL JOURNAL are requested to communicate with the Office, 429, Strand, W.C.2, on receipt of proof.

IN order to avoid delay, it is particularly requested that ALL letters on the editorial business of the JOURNAL be addressed to the Editor at the Office of the JOURNAL.

THE postal address of the BRITISH MEDICAL ASSOCIATION and BRITISH MEDICAL JOURNAL is 429, Strand, London, W.C.2. The telegraphic addresses are:

1. EDITOR of the BRITISH MEDICAL JOURNAL, *Attiology, Westrand, London*; telephone, 2630, Gerrard.
2. FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate, Westrand, London*; telephone, 2630, Gerrard.
3. MEDICAL SECRETARY, *Mediscera, Westrand, London*; telephone, 2630, Gerrard. The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone, 4737, Dublin), and of the Scottish Office, 6, Rutland Square, Edinburgh (telegrams: *Associate, Edinburgh*; telephone, 4361, Central).

QUERIES AND ANSWERS.

INCOME TAX.

"A MEDICAL WOMAN" asks for information as to the expenses deductible and the allowances to be made in the assessment of the income of herself and husband.

*** Depreciation allowances cannot be claimed in connexion with professional earnings, and the original cost of motor-car and boat is a capital charge. Estimating the expenses roughly, the assessment of the income should work out somewhat as follows:

1. Husband, gross earnings			£290	
Wages and running expenses of motor, say			£100	£190 0 0
2. Self, gross earnings			£610	
Wages and running expenses of motor, etc.	£150			
Rent and other necessary expenses	£100	£250		£360 0 0
				£550 0 0
Deduct 10 per cent. allowance for earned income				£ 55 0 0
				£495 0 0
Investment income				£ 27 0 0
Total assessable income				£522 0 0
Personal allowance			£225	
Personal allowance, wife's earnings ...			£ 45	
Child allowance			£ 36	£306 0 0
				£216 0 0
Tax at 3s. in the £				£ 32 8 0
Less £28 life assurance premiums at 3s. ...				£ 4 4 0
				£ 28 4 0

"A. B." bought a car some years ago for £200; he has now replaced it by a car of the same make but higher horse-power, at a cost of £600, less £200 realized for the old car. The makers have ceased to build cars of the same horse-power as the first one.

*** Theoretically the proper deduction to be made for income-tax purposes is the cost of a car of similar horse-power, less £200. The practical difficulty that no such car is now made can doubtless be surmounted by a reasonable estimate based partly on the rise in the cost of the higher powered car or the practice of other manufacturers. We assume, of course, that the original car was not purchased at second hand.

H. G. F." inquires as to the validity of his claims for allowance of (1) depreciation of motor cars, and (2) decoration of consulting room.

*** (1) An allowance for depreciation is restricted to the assessment of "trades, manufactures, and concerns in the nature of trades," and by implication does not extend to professions. This distinction will be removed if and when the recommendation of the recent Royal Commission to that effect is carried out; in the meantime all the professional man is entitled to is the allowance of the cost of replacement of the car when that cost is incurred. No reduction of the claim for expenses on the ground that the car is used for non-professional purposes would be justified if such use has not increased the total cost of running. (2) The cost of redecoration of the consulting and waiting rooms seems undoubtedly legitimate expenses, and we have not known any objection raised hitherto. We may add that if our correspondent took over the practice in 1920, his liability for 1920–21 would seem to be determined by the average profits of the practice for the three years ending December 31st, 1919, in which case the question of redecoration would not seem to arise at present.

"T. M. C." asks for additional information in reply to his question (December 18th, 1920, p. 957) as to the effect of his retirement from a firm on December 31st, with reference in particular to payments which the practice may make to him after that date.

*** If the past assessments had been made on the basis of the value of the firm's gross *bookings* less expenses, it would be obvious to all concerned that "T. M. C." would be relieved of one-fourth of the assessment for 1920–21 in view of his retirement on December 31st, 1920. Any receipts that reached him in the form of payments for old debts would have been already taxed. The position is, in our opinion, precisely the same where the assessments have been based on cash receipts. When the assessment for 1920–21 was made, it referred to the income of the practice for that year, although it was calculated on an artificial basis, and the tax payable is in respect of that income, and not in respect of the cash receipts on which the tax is in fact calculated. There appears to be no legal reason why "T. M. C." should pay tax on more than three-fourths of his share of the firm's assessment for 1920–21.

SHIP'S SURGEONS.

"S. S." asks for information on the following points: (*a*) The present average pay of ship's surgeons; (*b*) whether it is difficult to get posts as such; (*c*) to whom does one apply—that is, the marine superintendent or who; (*d*) is much uniform expenditure necessary for casual voyages; (*e*) which are considered the best lines to go for? He is a retiring I.M.S. officer, a bachelor of 43, and does not want to sign on for a long period with any one line, but to get about the world on many different lines.

SEA WATER FOR INTERNAL USE.

"HALOID" asks whether there is any preparation of sea salt which can be used to make sea water fit to be taken internally. Two preparations have been suggested to him, namely, bay salt and Tidman's sea salt, and he desires to know whether they have been used internally, and, if so, in what strength.

LETTERS, NOTES, ETC.

AMAZIA (AMASTIA).

DR. A. KAYE JARRATT (Bridlington) writes: A girl, aged 13, examined by me, was found to have no left breast or nipple. The origin of the pectoralis major was from the first and second ribs, and when put into action the muscle stood out like a cord in a horizontal position. The mother attributes these abnormalities to a slight blow received by her when three and a half months pregnant. The blow was in an upward direction over the left breast. The condition is, I presume, the one known as "amazia."

INSECT VECTORS OF DISEASE.

DR. H. COMPIN PARSONS (Medical Superintendent, Ministry of Pensions Hospital, Cannock Chase, Hednesford, Staffs) writes: A large queen bee was knocked down by the bacteriologist at this hospital. On examining his quarry he discovered small beads of pus on the front pair of legs containing numerous pneumococci, *M. catarrhalis*, and *B. influenzae*. It is interesting to note that even in February living insects are found carrying micro-organisms for distribution in the food stores.

SIGNS AND SYMPTOMS.

DR. J. LEWIS THOMAS (Newport, Mon.) writes: That precisian in language, spoken or written, Dr. Gee of St. Bartholomew's, in his *Essay on the Nature of Asthma*, on page 132, writes "symptoms" or "lesions of functions," and on page 134 defines symptoms as "disordered functions observed in patients during life."

VAGITUS UTERINUS?

DR. M. I. MCNIFF (London, S.W.) writes: The following case might be of interest to your readers. I was called to a confinement on January 15th. On arrival I found the patient rather exhausted. She was a primipara aged 40. On examination the os was well dilated, but the head was high up. I administered chloroform and proceeded to apply instruments. When I had them almost in position I heard a baby's cry. I said nothing. Soon there was a second cry, quite plain, and nurse said to me "the baby is crying." The baby cried three times in all, and quite distinctly. I hastened delivery as much as I could, but it would be seven minutes or more before I delivered it after the cry. On delivery it was cyanosed, with cord round neck. After a short period of artificial respiration it began to breathe normally, and is now a healthy baby.

SUPERNUMERARY NIPPLES.

DR. JOHN S. CLARKE (Weobley, Herefordshire) writes: In the course of examining between 8,000 and 9,000 men proceeding up to their units at the front I came across one case in which there were a pair of well-developed supernumerary nipples, as described by Dr. F. B. Skerrett (February 12th, p. 254). I also met with one case with a single supernumerary nipple, but in this man's case the supernumerary nipple was on the belly wall just below the costal margin—it was undoubtedly a rudimentary nipple. Both men were Welshmen. I have amongst my patients a woman who has two fully developed breasts, but on the left breast, below and slightly outside the normal nipple, is an accessory nipple. During lactation milk could be expressed and the baby was able to suck from it. The woman refused to allow me to take a photograph, nor would she consent to allow herself to be shown at a medical meeting.

SEVEN GREAT-GRANDPARENTS ALIVE.

DR. S. L. CORRY (Uraidla, South Australia) writes: With reference to Dr. J. Robertson Hall's letter in the BRITISH MEDICAL JOURNAL of November 13th, 1920, and "A. G.'s" letter of November 20th, 1920, it may be of interest to relate that in my district is a small boy of 2 years, whose parents, two grandfathers and two grandmothers, four great-grandfathers and three great-grandmothers are all living. Soon after the baby's birth these relatives were photographed as a family group.

PREDISPOSING CAUSES OF CONSUMPTION.

DR. ERNEST KINGSCOTE (London, W.1) writes: In Sir James Mackenzie's letter in your issue of February 12th he states that in twenty-eight years of general practice many of his patients developed consumption, but that most of them were previously ill for many years and under his care for a variety of complaints. It occurred to him that these complaints may have been due to conditions which predisposed to consumption. Now, one of these, according to the French school, is gastric dilatation and consequent hypochloridrosis; another is restricted movements of the upper chest. Both of these conditions predispose to consumption. The one lowers the vitality, and therefore the fighting power of the phagocytes, through imperfect digestion, mal-assimilation, and auto-intoxication; the other through imperfect oxidization and retention of carbonic acid gas. These conditions should be recognized early and treated. The fixed lung apices form a convenient nidus for the tubercle bacillus. These fixed apices can readily be made to move again by the breathing exercises for the reproduction of lung elasticity in emphysema and other forms of fixed chest, which I demonstrated before the Medical Society of London on November 8th, 1920. The reproduction of the movement and the consequent dilatation of hitherto unused healthy air vessels also tend to benefit the patient even in advanced cases of phthisis pulmonalis.

"T.B. OFFICER."

DR. E. WEATHERHEAD (Alderley Edge, Cheshire) writes: Is it not time that some one with a respect for the proper use of medical phraseology should call attention to the ridiculous method of abbreviation—"T.B. Officer"—which seems to be rapidly becoming universal, to denote "tuberculosis officer." Whether it originated in the Army Medical Service I know not, but I cannot remember its use prior to the war. This has already taken such firm root that letters are frequently addressed in this fashion, even by Government authorities, and in one report-form at least, issued by the Ministry of Pensions to tuberculosis officers, the place for that officer's signature is subscribed "T.B. Officer for ——." Imagine any medical man who specializes in one disease being designated in terms of the micro-organism specific to that disease! The specialist in syphilitic disease would become "S.P. Officer," and so on. Let tuberculosis authorities at any rate discountenance such slovenliness in nomenclature. Is the objection to T.O., that the tuberculosis officer might be mistaken by the uninitiated for the transport officer?

MALIGNANT TERTIAN MALARIA CONTRACTED IN ENGLAND.

DR. W. M. MCDONALD, District M.O. and M.O.H. Antigua, British West Indies, writes to suggest that the case described in the note of Professor Glynn and Dr. Matthews in the JOURNAL of November 27th, 1920, p. 811, as an example of malignant tertian malaria contracted in the North of England was an example of long-standing infection. His experience of more than twenty years in a highly malarious country is that hundreds of patients with subtertian malaria suffering from headache and feeling tired and out of sorts go to a doctor for a tonic without being aware that their temperature is raised. He mentions the case of a boy, aged 17, whose blood was crowded with crescents; he walked several miles to the surgery for a tonic, received medicine, and went back to his work as a field labourer next day. Such an infection, however, if untreated, will culminate sooner or later in a pernicious attack. Dr. McDonald considers that the blood count in the North of England case, the increase of mononuclears, and the corresponding decrease in polymorphs are indicative of chronic malaria. In his own experience the increase of large mononuclears is hardly perceptible in an initial attack, but grows after each subsequent attack. He has found an increase of large lymphocytes and a diminution of small lymphocytes a marked characteristic of malarial blood. With regard to the assumption that the patient was infected on September 27th with malarial fever, beginning on September 29th, he writes: During twenty years in the West Indies I have never seen nor have I heard of any newcomer suffering from malarial fever within three days of arrival, although *Anopheles* abound and infection abounds. I should regard it as quite impossible for a patient to show symptoms two or three days after being bitten by infected mosquitos. After reading the history of the case very carefully, I should imagine that this patient contracted malaria many years ago from an infected mosquito in a park or the country round Liverpool. In a place like Liverpool there must be many infected persons from abroad, and the *Anopheles* in this neighbourhood are therefore open to infection. I would suggest that the headaches to which the patient was liable were due to malaria, and that, had her temperature been taken at such times, it would have been found to be slightly raised, and that her paleness and lack of strength were directly due to chronic malaria.

COMBINATION IN THE ELECTRO-MEDICAL INDUSTRY.

AMALGAMATION seems to be the order of the day in the electro-medical and *x*-ray industry. The Cox-Cavendish Electrical Company, of Harlesden, itself a combination of two older firms, has combined its manufacturing resources with those of X Rays, Limited, of London, comparatively a new but an energetic house. The firms are to retain their separate identity so far as their commercial activities are concerned, but in the designing and manufacture of their apparatus they will share each other's factory facilities, and their research staffs will work together as one organization. It is expected that this combination will result in larger scale production, particularly of high tension apparatus, with consequent economy, not only to the co-operating firms, but to their customers.

AGE AND PENSIONS.

"AETAS" writes: The argument in my letter (February 12th, p. 249) that age is not a *cause* but a *measure* of disability ends up with what appears to be a *non sequitur* in the statement that "old age is a disability." As the whole subject requires careful thought and reasoning, may I insert a few words left out of my argument by the printer? The passage then reads:

> "In practice the disabilities of older soldiers, though very real in economic effect (to compensate for which is the true purpose of disability pensions), are often difficult to define in terms of disease. *The truth is, old age itself is, in fact and in effect, a true disability, which requires recognition in disease nomenclature, if only for the convenience of the term in summarizing a state of disability which, being compounded of many accumulated residues of disease and strain, does not easily fall into any one particular existing disease category.* In short, old age is a disability which may be, and usually is, aggravated by service, and that aggravation cannot pass away."

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 35, 36, 37, 40, 41, and 42 of our advertisement columns, and advertisements as to partnerships, assistantships, and locum tenencies at pages 38 and 39.

THE following vacant appointments of certifying factory surgeons are announced: Barton-on-Humber (Lincoln), Brading (Isle of Wight), Bromyard (Hereford), Wincanton (Somerset).

DR. O. K. WILLIAMSON, who was recently appointed to the Chair of Medicine at University College, Johannesburg, will not take up his new duties until February, 1922, and will not leave England until towards the end of the present year.

IN sending their new catalogue of French medical books Messrs. Hachette, the well-known French publishers and booksellers of 18, King William Street, W.C.2, state that they welcome inquiries for foreign medical and scientific works.

SCALE OF CHARGES FOR ADVERTISEMENTS IN THE BRITISH MEDICAL JOURNAL.

	£	s.	d.
Six lines and under	0	9	0
Each additional line...	0	1	6
Whole single column (three columns to page)	7	10	0
Half single column	3	15	0
Half page	10	0	0
Whole page	20	0	0

An average line contains six words.

All remittances by Post Office Orders must be made payable to the British Medical Association at the General Post Office, London. No responsibility will be accepted for any such remittance not so safeguarded.

Advertisements should be delivered, addressed to the Manager, 429, Strand, London, not later than the first post on Tuesday morning preceding publication, and, if not paid for at the time, should be accompanied by a reference.

NOTE.—It is against the rules of the Post Office to receive *poste restante* letters addressed either in initials or numbers.